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ABSTRACT

This annotated bibliography includes entries to reflect the thrust of the entire Administering for Change Program (ACP) of Research for Better Schools, Inc. The goal of ACP is to create an institutional change capability for local school districts. This volume is divided into six sections. Section One, Introduction, describes ACP. Section Two, Overview of Change Literature, reflects the Knowledge Base Component of ACP. Sections Three, Four, and Five, Organizing for Change, Planning for Change, and Managing for Change, respectively, reflect the three remaining components of ACP. Section Six consists of entries on bibliographies and annotated bibliographies. Both an author and a title index are provided in the back of the volume. (Editor/CK)

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AN ANNOTATED BIBLIOGRAPHY ON

ADMINISTERING FOR CHANGE

1

RESEARCH FOR BETTER SCHOOLS, INC.
1700 Market Street/Suite 1700
Philadelphia, Pennsylvania 19103

ADMINISTERING FOR CHANGE PROGRAM

AN ANNOTATED BIBLIOGRAPHY ON ADMINISTERING FOR CHANGE

Louis M. Maguire, Sanford Temkin and C. Peter Cummings

Administering for Change Program

Research for Better Schools, Inc.

October, 1971

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FOREWORD

This annotated bibliography was originally conceived as an update of two earlier publications of Research for Better Schools, Inc. (RBS), An Annotated Bibliography of the Literature on Change and An Evaluation of Comprehensive Planning Literature with an Annotated Bibliography. It was finally decided to include entries to reflect the thrust of the entire Administering for Change Program (ACP) of Research for Better Schools, Inc. (an overview of which appears in the introduction).

A number of information sources were consulted in the literature searches involved in the preparation of this volume. The Educational Resources Information Center (ERIC) was searched through two of its publications, Research in Education and Current Index to Journals in Education. A number of journal articles were obtained from Current Contents, a weekly publication which lists the tables of contents of many magazines in a variety of subject areas. Papers were garnered primarily from ACP staff who attended various conferences during the last two years. Books and other publications were ferreted out from the review sections of many journals, from the bookshelves of various RBS personnel, and from A Subject Guide to Forthcoming Books.

This volume is divided into six sections which, as previously mentioned, are intended to reflect the thrust of the Administering for Change Program. Section One, Introduction, describes ACP. Section Two, Overview of Change Literature, reflects the Knowledge Base Component of ACP. Sections Three, Four, and Five, Organizing for Change, Planning for Change, and Managing for Change, respectively, reflect the three remaining components of ACP. Section Six consists of entries on bibliographies and annotated bibliographies. Sections Two, Three, Four, and Five are subdivided by means of various subject headings (see Table of Contents) in the hope that this will present the information to the reader in a more useful manner. Both an author and a title index are provided in the back of the volume.

It should be noted that not all of the annotations provide a general abstract of the work cited. While some of the annotations do, many reflect instead specific aspects of an individual document.

If an entry was taken from ERIC, the ERIC accession number has been placed in brackets at the end of the citation.

A number of persons deserve a large measure of gratitude for editorial assistance in the preparation of this volume: Steve Gyuro, Joan Rosenstein, Harris Miller, Paul Day, Lewis Polin, and Elinore Pritchard. Thanks are due to Herb Demby for assistance in manuscript preparation, to Bert Cooperstein for assistance in graphics, and to Fleur Weinberg, RBS Librarian. Special thanks for diligent and dedicated manuscript typing are given to Carol Perrone, Sheila Marshall, Elaine Klein, Peggy Camm, and Rose DeWilliams.

Guy B. Adams
September, 1971

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SECTION ONE
INTRODUCTION

The Administering for Change Program is one of three programs of Research for Better Schools, Inc. (RBS). The other two programs are the Individualizing Learning Program and the Humanizing Learning Program. The goal of the Administering for Change Program (hereafter referred to as ACP) is to create an institutional change capability for local school districts.

To achieve this goal, ACP is structured into four components: Knowledge Base, Organizing for Change, Planning for Change, and Managing for Change. The Knowledge Base Component directs its attention to satisfying the continuing need for familiarity with the theories, underlying concepts, methods and structures for change, and with the constraints opposing change. The Knowledge Base Component surveys, collects, analyzes, evaluates, synthesizes, and reports field data and literature information to assist in the conceptualization of change processes and to support the other program components. The annotated bibliography contained in this document is a direct spin-off of Knowledge Base activities which were designed to support the other program components.

ACP's notion of an institutional change capability will now be discussed as an introduction to the other three program components. Change capability is measured by the range of organizational actions which a local school district can perform to improve its performance and the district's ability to make appropriate decisions to implement one or more of the actions.[1] Thus, the wider the range of organizational actions which can be implemented and the greater the ability to make appropriate decisions, the more extensive is the change capability. Institutionalization of change capability means that the capability is embedded in the basic design, processes and operation of the local school district such that its continued existence is not dependent upon unique commitments and dispositions of leaders and ad hoc and random circumstances. Bluntly stated, a school district with an institutional change capability would be more able, over time and space, to decide upon and bring about, in a systematic, effective and efficient manner, those changes it deemed necessary. This is because it not only would have a broader range of operations available to it, but also would be more able to determine which of the options best meets its purpose and to implement the selected option(s).

ACP approaches the development of change capability by specifying the organizing, planning and managing activities and operations of local school districts which are both necessary and sufficient for local districts to attain an institutional change capability and thus utilize the process of administering for change. Through the construction of an interrelated series of self-instructional systems, ACP is committed to assisting school district personnel in modifying their organizations so that school districts are capable of organizing, planning and managing for change.

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[1] Thomas E. Drabek and J. Eugene Haas, "Laboratory Simulation of Organizational Stress," American Sociological Review, XXXIV (April, 1969), p. 225.

The Organizing for Change, Planning for Change and Managing for Change Components of ACP, supported by the Knowledge Base, are directed at developing an integrated system of operational approaches which, when used in concert, enable a school district to attain and utilize an institutional change capability. Each of the three components is best viewed as producing an essential element of change capability. An overview of what each component contributes to change capability and of the interrelationships among the components is as follows:

1. Organizing for Change Component - organizing district operations and human interactions so that behavioral norms and information flows required by the planning-decision and implementing-change mechanisms are facilitated. This organizing mechanism must be capable of creating new roles in accord with new functions and of training people for these roles. It must inculcate the values of flexibility and adaptability, extend the range of possible organizational actions, and call into fruition those organizational actions which are in accord with the planning-decision and implementing-change mechanism.
2. Planning for Change Component - making resource allocation decisions optimally (finding the best program in the district to allocate resources), as opposed to present budgetary decision rules which at best could be suboptimal (finding the best place within the K-12 reading program to allocate resources). A planning process which directs decisions to optimal levels (under the assumption that school districts

could allocate their resources in a substantially better way) will foster change.

3. Managing for Change Component - defining, organizing, directing and controlling the implementation of change decisions, whether derived from the planning process or by other means. Changes are not managed in the same way as are ongoing school programs. A management system capable of implementing change decisions is required to complement the organizing and planning-decision mechanisms.

In sum, ACP is directed at change of the school district as an organization and social system.

The Organizing for Change Component provides the organizational guidance and instruction necessary for local school districts to utilize the process of administering for change. The aim of the component is to develop products/capabilities which help school district personnel modify existing organizational ideologies, norms, processes, structures and roles so that these ideologies, norms, processes, structures and roles become an active element of change capability and do not serve as barriers to or constraints upon change capability. The labeling of the component as Organizing for Change is to stress that organization is not something which should be done periodically (e.g., every five years), or which, when effectively accomplished for one purpose and in one time frame, has enduring value for other purposes and other time frames. Organization is a continuous process of adjustment and readjustment.

The Planning for Change Component recognizes that information about the total school district and the interrelationships of its operations, and schemas for utilization of such information are necessary for systematic improvement. It develops products/capabilities which enable a school district to (1) view its operations as a group of interrelated and mutually dependent activities which are directed toward a set of shared objectives, (2) evaluate the effectiveness and efficiency of its current operations, and (3) make future change decisions on valid and reliable data. The component emphasizes the transitions that local school districts must go through if they are to attain short-term as well as long-term planning capabilities.

The Managing for Change Component focuses upon specific problems involved in the managing of activities which are intended to bring about desired change in a local school district. It develops products/capabilities for local school district use which have short-term consequences and long-term impact upon those managerial activities which aid in solving non-postponable problems and which provide a means for defining, monitoring, and controlling specific changes.

Hopefully, this brief overview of ACP will help the reader understand the major divisions of the bibliography, and the placement of annotations under each division. The placement of the annotations was determined by their estimated relevance to the division.

SECTION TWO
OVERVIEW OF CHANGE LITERATURE

I. DEFINITIONS AND TYPES OF CHANGE

Ayres, Robert U. "The Forces that Change Technology," Futurist, III (October, 1969), pp. 132-133.

The author discusses two ways of looking at the dynamics of technological change, the ontological and the teleological viewpoints. The ontological view is that invention and innovation are visible manifestations of a self-generating process or an institution having a dynamism and a life of its own. The teleological view is that invention and especially innovation are impersonal social processes determined by social or military needs or by the existence of an effective economic demand.

Bandura, Albert, Edward B. Blanchard, and Brunhilde Ritter. "Relative Efficacy of Desensitization and Modeling Approaches for Inducing Behavioral, Affective, and Attitudinal Changes," Journal of Personality and Social Psychology, XIII (1969), pp. 173-199.

The authors report a study which investigated basic change processes accompanying several social-learning procedures from the perspective of a dual-process theory of avoidance behavior. Three basic modes of attitude change are discussed: (1) the cognitive-oriented approach, which attempts to modify persons' attitudes by altering their beliefs about the attitude object through various forms of persuasive communications; (2) the affect-oriented approach, wherein both evaluations of, and behavior towards, particular attitude objects are modified by altering their emotion-arousing properties, usually through direct or vicarious conditioning procedures; and (3) the behavior-oriented approach, where attitudinal changes are achieved by getting a person to engage in new behavior in relation to the attitude object without untoward consequences.

Bennett, Claude F. "Diffusion within Dynamic Populations," Human Organization, XXVIII (Fall, 1969), pp. 243-247.

Two types of earliness-of-acceptance, innovativeness and precocity, are distinguished for the sake of conceptual clarity and research precision. Innovativeness refers to how soon a member of an original population accepts the item after it first appears. Precocity refers to how soon the unit accepts an item after entering a population in which the item already exists.

Bhola, Harbans Singh. "The Need for Planned Change in Education," Theory Into Practice, V (February, 1966), pp. 7-10.

The author stresses the need for planned or inventive change over homeostatic or reactive change. He argues that planned change fits in and helps to attain the limits of a democracy.

Blom, Rod, and Gilbert H. Sauer. "A Demand for Change and a Response," Public Welfare, XXVII (January, 1969), pp. 94-100.

Conventional social work practice is seriously questioned in that it rests heavily on the assumption that once a person has insight into his problems he will discard inappropriate behavior and thus be enabled to function more effectively. The authors feel that there is little if any relationship between insight and improved functioning, and that if functioning does improve, this improvement may actually be in response to expectations rather than to insight. Change is viewed as an ongoing process which is often in conflict with rules and procedures which are not adequate to the present situation, but which nevertheless remain in force and effect. If innovation is to occur, there must be opportunity for experimentation, recognition that errors will be made, and opportunity to make mistakes.

Boyan, Norman J., and Ward S. Mason. "Perspectives on Educational R&D Centers," Journal of Research and Development in Education, I (Summer, 1968), pp. 190-202.

The authors argue that a distinction should be made between dissemination and diffusion. Dissemination should refer to distribution of information in various forms, or activity which should occur regularly at all stages of the innovative process. Diffusion should refer to the spread or adoption of an innovative practice or alternative among potential users.

Flinn, William L. "Influence of Community Values on Innovativeness," American Journal of Sociology, LXXV (May, 1970), pp. 983-991.

Innovativeness is defined as the degree to which an individual adopts new ideas earlier than do other individuals. The author demonstrates that analytical structural effects do influence innovativeness of truck growers in sever Ohio communities. He discusses whether farmers adopt or reject farm practices because of their individual decision-making process or whether social constraints are responsible for their innovativeness.

Hoyle, Eric. "How Does the Curriculum Change? I. A Proposal for Inquiries," Journal of Curriculum Studies, I (1969), pp. 132-141.

The author focuses on curriculum change, rather than on curriculum development, because he is concerned not only with the rational processes of curriculum planning which are implied in the term development, but also with the relatively unplanned and adaptive "drift" which has characterized so much curriculum change in the past and still remains a significant form of change. He feels that contributions to the analysis of social change and curriculum change have come from four major approaches: (1) concentration upon institutional structures, and the production of case studies of the relationship between socio-economic factors and the social function of different sorts of educational institutions; (2) a broad view of curriculum development which includes a consideration of sociological influences on the curriculum; (3) the analysis of the values pervading society and their influence upon the content of the curriculum; and (4) the study of the social determinants of educability. He discusses a paradigm for identifying the nature of educational change which distinguishes between education as an agent of social change (i.e., where social changes are brought about through education), as a condition of change (i.e., where changes in education are necessary to broader social changes), and as an effect of change (i.e., where educational institutions adjust to changes occurring in other social institutions). He criticizes Paul Mort's studies omitting from consideration the factors which determine curriculum innovations which cost little and the factors which lead to the utilization of available financial resources for changing, rather than maintaining, the existing curriculum.

Jacobs, Jerry. "'Symbolic Bureaucracy': A Case Study of a Social Welfare Agency," Social Forces, XLVII (June, 1969), pp. 413-422.
The author suggests that unofficial positive change cannot easily be distinguished from unofficial negative change, and, in providing for the one, one must contend with the other.

Kushnick, Louis. "Race, Class and Power: The New York Decentralization Controversy," Journal of American Studies, III (1969), pp. 201-219.
The acknowledgement and resolution of conflict is the only route to change.

Lionberger, Herbert F., and Joe D. Francis. "Views Held of Innovator and Influence Referents as Sources of Farm Information in a Missouri Community," Rural Sociology, XXXIV (June, 1969), pp. 197-211.
Using semantic differential scales, the authors identify four distinguishable ways of viewing four innovation sources: (1) utility, (2) affectivity, (3) practicality, and (4) accessibility.

Lovell, C. A. Knox. "Biased Technical Change and Factor Shares in United States Manufacturing," Quarterly Review of Economics and Business, IX (Autumn, 1969), pp. 17-33.
The author examines the nature of technical change in nineteen American manufacturing industries, and the effects of technical change upon estimates of the elasticity of substitution and upon trends in relative factor shares.

Maguire, Louis M. Observations and Analysis of the Literature on Change. Philadelphia: Research for Better Schools, Inc., June, 1970.
This document is divided into two parts. In Part I, observations on the literature on change for practicing school administrators are presented under the headings of (1) conceptual confusion; (2) goals and objectives; (3) statement of problems; (4) democracy and planned change; (5) the school district as a target or initiator of planned change; (6) internal and external linkage; (7) change capability; (8) maintenance or improvement; (9) change models; (10) phases of change; (11) roles in change; (12) crisis as a stimulus to change; and (13) lack of training. Part I is concerned with the value of the literature to the practitioner. It attempts to join knowledge of the change literature, which is found in Part II, with knowledge of the educational setting. In Part II, various viewpoints in the literature are presented under the headings of (1) definitions and types of change; (2) change models; (3) strategies and techniques; (4) people involved in change; (5) sources of and barriers to change; and (6) research studies of the change process. The purpose of the analysis is to present the reader with a general overview of the topic of change, and to provide some support for the observations which are presented in Part I.

Micklin, Michael. "Urbanization, Technology, and Traditional Values in Guatemala: Some Consequences of a Changing Social Structure," Social Forces, XLVII (June, 1969), pp. 438-446.
The author attempts to report explicit associations or relationships among the social, structural and psychological components of change. Specifically he attempts to assess the effect of increasing industrialization and urbanization on personal value orientations, using data gathered from a sample of male respondents in Guatemala City. The results show (1) that "traditionalism" has declined slightly more rapidly than would be anticipated from a knowledge of recent modernization trends in Guatemala, and (2) that variations in the degree of "traditionalism" are related to age, level of education, and occupational status.

Miller, Richard I. "Kinds of Change," Educational Leadership, XXVII (January, 1970), pp. 331-333.
The author emphasizes that many people are writing about change without really studying: (1) the innovation, (2) its communication, (3) in a social system, and (4) over time. He believes that the polarization of approaches is a development that is taking place in the study of change. In terms of polarization of approach, the sensitivity training group approach, which emphasizes changing the individual, is portrayed as representing one end of the continuum. The other end of the continuum is the systems analysis approach, which contends that change comes about by making organization and procedures more efficient. The author argues that different strategies for change need to be devised for different kinds of change and that we must begin to think about change at five levels: national, state, local, classroom, and individual. He suggests that we consider different strategies for four different types of innovations: (1) organizational and instructional, (2) organizational, (3) instructional, and (4) methodological.

Muessig, Raymond H. "Change - The Only Constant," Educational Leadership, XXVI (March, 1969), pp. 543-546.
The author discusses three viewpoints regarding change. The first viewpoint emphasizes keeping things "just as they are" or changing other people instead of seeking and bringing out changes in ourselves and our own situations. The second view refers to those who want to use and control the school and other institutions to bring about specific social changes. Such people claim to have a master plan, more or less, for the future. The third view holds that change should be surveyed, studied and pondered in terms of its consequences for the individual and the society.

Novotney, Jerrold M. "Innovations in Catholic Education," Catholic School Journal, LXIX (November, 1969), pp. 24-29.
The author defines innovation as the result of a recombination or a restructuring of that which is known so that a new pattern is formed. An innovation is an idea conceived or discovered by an individual or group to help solve a problem that is perceived by that group or individual. Innovation only becomes change when it is accepted and implemented. The process by which it is placed into the context for which it was designed is the management of change.

Ojemann, Ralph H. "Education for Change," School Research Information Service Quarterly, III (Fall, 1970), pp. 16-23.
The author identifies seven types of change:

1. One type occurs when additions are made to knowledge.

2. Another type of change occurs when ways of using or applying knowledge change.
3. Another type of change occurs when the interpretation of a given finding changes.
4. Another type of change occurs when man's emotional reactions to a given behavior situation changes.
5. Closely related to changes in emotional reactions are changes in the mores, customs, and the approved or expected behavior of individuals in a society.
6. Changes in the ease and rapidity of travel force the individual to react to changes in location.
7. Changes produced by the passage and enforcement of laws on edicts.

Four factors account for the continuing increase in the rate of change: (1) the accelerated growth of knowledge, (2) more rapid re-interpretations of data, (3) the increased emphasis on finding better ways of doing things, and (4) more rapid communication of findings. In the light of these interpretations of change, six ingredients are suggested as necessary for the education of young people to cope in a world of rapid change:

1. Experiences are needed to develop the ability to draw valid inferences from one's daily observations.
2. The relation of emotional states to accuracy and selectivity of observation must be considered.
3. Learning the differences between hypotheses and generalizations of differing degrees of probability is important in education for change.
4. The differences between the stable and changing aspects of life are facilitated by recognizing the nature of different types of change.
5. An understanding and appreciation of the different motivations which underlie change is important.
6. The understanding and appreciation of the effects of change should be enriched.

Rice, Arthur H. "What Education Needs: Neomobilistic Change," Nations' Schools, LXXXII (December, 1968), p. 12.

The author suggests that it should be possible to reach agreement as to changes that would make a better life for all of us. Having reached agreement, the science and techniques of giving structure and direction to change must be developed. One such technique is "neomobilistic change," developed by Egon Guba. Guba uses this phrase to mean a conscious direction to move a system or organization in a new direction.

Robertson, Alex. "Penal Policy and Social Change," Human Relations, XXII (December, 1969), pp. 547-563.

After discussing two value systems, the author concludes that our penal system is geared to the twin, and perhaps incompatible, aims of punishment and reformation. He emphasizes that since the process of change is a complex one advancing at different speeds throughout the social structure, no uniform pattern of values shapes the actions of all segments of society.

Rogers, Everett M. "Developing a Strategy for Planned Change." Paper presented at the Symposium on the Application of System Analysis and Management Techniques to Educational Planning in California, Orange, Calif., June, 1967.

The author defines planned change as that which is caused by outsiders to the social system who, on their own or as representatives of agencies of change, seek to introduce innovations into the social system in order to achieve definite goals. Three main strategies for planned change in education are identified and discussed:

1. Base the topics investigated on the felt needs of practitioners.
2. Create an educational structure to facilitate change.
3. Raise the practitioner's ability to utilize research results.

Saville, Anthony. "Topography of Change," The Clearing House, XCII (January, 1968), pp. 271-3.

The author proposes four categories of educational change: (1) new context, e.g., technological advances; (2) new processes, e.g., team teaching; (3) new goals, e.g., increased college orientation; and (4) new context, e.g., curriculum change.

Sussman, Marvin B., and Marie R. Haug. "The Vicissitudes of Change," Social Science and Medicine, III (1969), pp. 179-189.

The authors agree that change may lack both pervasiveness and permanence because of the variations in human perceptions and the ceaseless alterations in organizational processes. Rejection and diffusion are two of the major themes in their analysis. Rejection is a direct response to planned change and reflects a lack of consensus between those initiating change and those implementing it. Diffusion is a "filtering" process whereby ideas are borrowed or extended from one area to another or from one group to another.

Trow, Martin. "Methodological Problems in the Evaluation of Innovation." Los Angeles: Center for the Study of Evaluation of Instructional Programs, University of California at Los Angeles, May, 1969. (ED 031 820)
An innovation is viewed as a break with routine and habit. Innovation disrupts unreflective ways of thinking, feeling, and behaving; requires a heightened measure of attention and interest in the matters at hand; and forces the participants, especially the creators, to think in fresh ways about familiar subjects, to reconsider old assumptions. The author believes that teachers are a growing barrier to change because of their growing political power. The fact that an experimental situation, in and of itself, tends to influence the outcome of the experiment is seen as a major barrier to effective evaluation of innovation.

Whebell, C.F.J. "Corridors: A Theory of Urban Systems," Ekistics, XXVIII (1969), pp. 348-353.
The author believes that innovations may be usefully categorized in three types: (1) philosophical, (2) organizational, and (3) material. He uses the term corridor to denote a linear pattern of major towns joined by highly developed "bundles" of transport routes. In the author's view, corridors comprise the primary historical-spatial system of innovation diffusion, the progress of which leads to differentials in the mix of material, organizational, and philosophical innovations from place to place.

II. CHANGE MODELS

Becker, Marshall H. "Sociometric Location and Innovativeness: Reformulation and Extension of the Diffusion Model," American Sociological Review, XXXV (April, 1971), pp. 267-282.
The author suggests a diffusion model in which the professional's innovativeness determines his centrality in the communication network and in which a desire to maintain or increase prestige motivates the professional to seek sources which are most likely to provide information on innovation.

Berty, Ernest. "Some Principles and Practices of Evaluation." Paper presented to West Virginia State Department of Education In-Service Program, (n.p.), November, 1968. (ED 027 622)
The author maintains that the kind of evaluation which holds the greatest promise for helping to improve the overall educational program is product evaluation, which is defined as some performance exhibited by a student through which he shows his ability, interest, attitude, or adjustment (e.g., when the student spontaneously en-

gages in a wide range of good reading). The steps in using the product outcome type of evaluation are listed as:

1. Define educational objectives (presently in terms of specific units of output) to be achieved through the experiences being evaluated.
2. Translation of the educational goals into descriptions of behavior which will be displayed if the objectives are achieved.
3. Identification of situtations in which the presence or absence of the designated behavior can be observed and recorded.
4. Establishment of some type of interpretive device (standard or norm) which can be used in measuring desired growth.

Bhola, H. S. "Limitations and Possibilities of Educational Diplomacy - A Theoretical Framework." Paper presented at the Sesquicentennial Seminar in Comparative Higher Education, Department of International and Comparative Education, School of Education, Indiana University, (n.p.), October, 1970.

The author examines one aspect of educational diplomacy, the process or engineering aspect, by focusing upon his configurational theory of innovation diffusion. He suggests that change agents can make many useful applications of the theory. There are four major factors in the theory: (1) the configurational relationship between the initiation of change and the target of change; (2) the linkages within and between them; (3) the environment surrounding the initiator and the target; and (4) the available resources.

Bishop, Leslee J. "The Change Models Need Rewriting," Educational Technology, XXV (January, 1968), pp. 286-287.

The author argues that implementation should be at the center of the change process, rather than where it is found in most change models, at the end.

"Brickell in the Vernacular," Audiovisual Instruction, VIII (June, 1963), pp. 384-389.

Three phases in instructional change are as follows: (1) invention or design, (2) evaluation, and (3) dissemination.

Bright, James R. "Some Management Lessons from Technological Innovation Research," Long Range Planning, II (September, 1969), pp. 36-41.

Technological innovation is initially defined as the process of translating knowledge into economic reality. As such, it involves four major functions: the scientific (search for knowledge), the engineering (reduction to practice), the entrepreneurial (introduction to society), and the managerial (optimization of usuage). Each of these functions is seen as requiring a different type of skill and knowledge, involving some changes of attitudes and values, and requiring the manipulation of very different resources. The full process of technological innovation is described in terms of the following eight-stage division: (1) scientific suggestion, discovery and observation, or recognition of need; (2) development of theory or design concept; (3) laboratory verification of theory or design concept; (4) laboratory demonstration of application; (5) field trial or full scale trial; (6) commercial introduction; (7) widespread adoption; and (8) proliferation. The author concludes that management decisions about radical technological innovations need to be made with an entirely different value system than is applied to most business problems. It is wrong to use conventional business wisdom when relating oneself to the long process of radical technological innovation, a process which encompasses a ten to twenty-five year span.

CALIPERS: Planning the Systems Approach to Field Testing Educational Products. Austin, Tex.: Southwest Educational Development Laboratory, 1969.

This manual attempts to describe the process of validating an educational prototype. The first step in the process, called pilot testing, is the development testing of the various segments of the prototype. The second step, called service testing, seeks to establish the value and serviceability of the prototype design under development. The third major step, called field testing, seeks to determine the usefulness and viability of the prototype in an environment that is not necessarily receptive, and to measure its effectiveness, cost, endurance, and potential in such an environment. Two kinds of feedback loops which should be present in product development are described. The first involves a constant, comprehensive and critical examination of the performance of a prototype as it undergoes the process of validation. The second serves the same function as the first, but is integral to continued, rather than initial, development. Unless the product is updated to suit the changing environments in which it must serve, its eventual, if not imminent, obsolescence is assured. The manual cautions that an administrator's basic function with regard to changes in his school is to help others implement these changes, not to impose them himself.

Chesler, Mark, Carl Jorgensen, and Phyllis Erenberg. Planning Educational Change: Integrating the Desegregated School. Volume III. Washington, D. C.: U.S. Government Printing Office, 1970.

The authors suggest ways for teachers and principals to achieve integrated schools. Their suggestions are predicated on a six-stage schema for planning educational change: (1) identification of goals, (2) diagnosis of the current situation, (3) development and test of instructional programs, (4) preparation for change and implementation of plan, (5) evaluation of change produced, and (6) maintenance of change and reconsideration of goals.

Doxiadis, Constantinos A. "The Future of the City of Man," Educational Technology, X (October, 1970), pp. 11-14.

The author describes five elements of human settlements: (1) nature, (2) man, (3) society, (4) shells or buildings, and (5) networks of roads, railways, waterpipes, power lines, etc. He then relates the five elements to the following statements:

1. The city of man is becoming inhuman.
2. Such a process is leading to a three-element or three-star city and is eliminating man and nature.
3. We must change our course.
4. The frame has been set for the universal city of man.
5. Our task is to make it human.
6. Our cities have well defined roles.

Dutta, Ratna. "Two Models of the Pattern Variables Paradigm," Social Research, XXXVI (Autumn, 1969), pp. 433-447.

Any "directively organized" system faces four minimal functional exigencies: (1) the products of adaptation vis-a-vis the exigencies of the environment; (2) the problem of integration (i.e., maintaining stability through inter-unit articulation); (3) the problem of pattern maintenance and tension management (i.e., maintaining an "orientation" pattern and intra-unit stability); (4) the problem of fulfilling the goals of the system (i.e., goal-attainment). The sequence of phased changes in small groups in emphasis of functional imperatives is in the following order: adaptation, goal-attainment, integration, and latent pattern maintenance. This model of small group behavior is combined with the Pattern Variables paradigm for the analysis of the dynamics of social systems. The Pattern Variables are grouped according to their relevance for each phase of the societal problem-solving process. The grouping is as follows:

Phase A. Adaptive-instrumental activity with the phase of maximal adpatation. Orientation to objects marked by universalism and performance. Attitudes marked by specificity and neutrality.

Phase G. Expressive-instrumental activity associated with the phase of maximal goal attainment. Orientation to objects marked by performance and particularism. Attitudes marked by affectivity and specificity.

Phase I. Integrative-expressive activity associated with the phase of maximal system integration. Orientation to objects marked by particularism and quality. Attitudes marked by diffuseness and affectivity.

Phase L. Symbolic-expressive activity associated with the phase of maximal latency. Orientation to objects marked by quality and universalism. Attitudes marked by neutrality and diffuseness.

Engel, James F., Roger D. Blackwell, and Robert J. Kegerreis. "How Information is Used to Adopt an Innovation," *Journal of Advertising Research*, IX (1969), pp. 3-8.

The authors believe that the failure of a substantial number of new products can be traced, at least in part, to insufficient knowledge about the process of adoption and diffusion of innovations. They feel that a particular concern of advertisers is adaptation of a strategy for the information needs of innovators. Using the new automobile diagnostic center as an example of an innovation, they discuss the process of adoption and diffusion.

Flanders, Ned A. "Sharing in Change," *Educational Leadership*, XXVII (January, 1970), pp. 327-330.

The author recommends three ways by which some progress toward change is likely to occur: (1) reduce the gap between intentions and actions; (2) make sure that all those who participate can decide what is relevant, what first steps will be taken, and how to evaluate these first steps in order to design subsequent steps; and (3) prepare modest plans for action.

Fraenkel, Jack R. "One Model for Curriculum Development." Paper presented at the Annual Meeting of the American Educational Research Association, Los Angeles, February, 1969. (ED 028 528)

During the course of the Taba Curriculum Development Project at San Francisco State College, a social studies curriculum for grades 1-8, organized around teaching-learning units, was developed. In the process, a curriculum model was evolved that includes an organization of, and relationships among, five major mutually interactive components, so that a system of teaching and learning is represented. The five components are: (1) objectives, (2) content, (3) learning activities, (4) teaching strategies, and (5) evaluative measures.

Gideonse, Hendrik D. *Educational Research and Development in the United States*. *National Center for Educational Research and Development*. Washington, D. C.: U. S. Government Printing Office, 1970.

The author attempts to portray the past history and current status of educational research and development in the United States. Three major activities are viewed as being associated with research and development: (1) research, the objective of which is to discover, reinforce or refine knowledge; (2) development, the objective of which is to produce materials, techniques, processes, hardware, and organizational formats for instruction; and (3) dissemination, the objective of which is to make information about research and development available in usable and effective forms. Three types of models on the relationship of research to development, or development to research, or the relationship of both to the improvement of education are described. The first type, called linear or dependency models, tends to view the goal of educational improvement as being dependent upon adequate diffusion mechanisms which in turn require the invention and development of tested innovations to diffuse, which in turn depend upon the adequacy of the research base. The linear or dependency model is likely to be used by a student of institutional change or of the larger process of the diffusion of innovation through a social system. The second type, called decision-oriented models, sees essential differences and disconnections between the research, development and dissemination functions, and draws attention to the different rules of evidence and sources and types of data input to decision making in each function. These models tend to be more impressed by the current decision-making requirements than by patterns which may emerge from somewhat longer-term historical analysis of change or from the apparent logical dependence of one function on another. Decision-oriented models are likely to be used by a sponsor of educational research and development who stands midway between the research and development process and the educational system and is confronted by demands for immediate effects as well as long-term benefits. The third type of research and development model, called linkage models, stresses the close interrelations of research, development, and dissemination. Linkage models tend to be performer-oriented and stress the importance of individuals in a research-development-dissemination continuum. Linkage models are likely to appear much more realistic to the researcher or developer. The author emphasizes that each type of model is relevant from the particular perspective of the one who uses it and each must be in some sense compatible with or senstive to the requirements of the others.

Glasser, Robert. "Evaluation of Instruction and Changing Educational Models." Los Angeles: Center for the Study of Evaluation, University of California at Los Angeles, September, 1968. (ED 032 647)

The thesis is proferred that changing educational practices require changes in our theories and techniques of evaluation. Six educational practices and the considerations for evaluation and measurement which each raises are itemized: (1) With respect to the specification of learning outcomes, the following are required: (a) a behavioral definition of goals, evaluating progress toward these goals, and clarifying these goals in the light of evaluated experience, (b) prior evaluation of educational procedures, insuring that they are in effect before assessing educational accomplishment, and (c) development of techniques for criterion-referenced measurement; (2) For the diagnosis of the initial state, what is required is the determination of long-term individual differences that are related to adaptive educational alternatives; (3) For the design of instructional alternatives, a key task is to determine measures which have the highest discriminating potential for allocating among instructional treatments; (4) For continuous assessment, the discovery of measurements of on-going learning which facilitate the prediction of the next instructional step is required; (5) For adaptation and optimization, the instructional model requires: (a) the detailed analysis of individual differences by instructional-treatment interactions, and (b) the development of procedures like the optimizing methods so far used in fields other than education; (6) For evolutionary operation, we require a systematic theory or model of instruction into which accumulated knowledge can be placed and then empirically tested and improved.

Glatthorn, Allan A., and Thomas R. Bowman. "Into Each Innovation Some Grief Must Fall," The Abington Conference '69: Strategies for Change. Abington, Pa.: Abington Learning Associates, 1969.

The authors report on a total change in an educational system. The change occurred in three years through three phases:

First Year: Change the Structure
Second Year: Change the People
Third Year: Change the Program.

The things which strengthened the staff and made the program work are explained, as well as the persistent and pervasive problems which were faced. In summing up the mistakes and successes of the change effort, the authors conclude the following: (1) be prepared to carry out your own in-service program; (2) develop a systematic plan for change; (3) run an open school; and (4) share the wealth.

Glines, Don E. Implementing Different and Better Schools. Mankato, Minn.: Campus Publishers, Mankato State College, December, 1969.

The author views seven ingredients as keys to rapid change: (1) dissatisfaction--there must be discontent with the existing structure among at least a minority of the community; (2) commitment--there must be a belief that better schools can be created; (3) hard work--the first two years, especially, the educators must be willing to work 26-hour days; (4) creativeness--there must be idea people who believe they can attack and solve the problems and frustrations which develop when change is attempted in a community; (5) there must be leadership persons whose major role is the implementation of change; (6) there must be adequate clerical and custodial help; and (7) there must be paraprofessionals available to aid teachers and programs. An eight step change model is proferred: (1) envisioning possible changes; (2) challenging the current status of schools; (3) develop a rationale for a new type of school; (4) plan change; (5) organize for change; (6) create the revisions planned during the first five stages; (7) evaluate the revisions; and (8) reflect on the changes.

Gross, Robert, and Robert Watt. "Staff Involvement and Structural Change," Journal of Secondary Education, XLIV (March, 1969), pp. 112-115.

Four phases in change are discussed.

1. Determining what is to be changed.
2. Determining who will be involved.
3. Complete involvement of the staff in making a decision and developing a plan.
4. Implementing the change, spring and summer workshops.

Guba, Egon G. "The Basis for Educational Improvement." Paper presented to the Kettering Foundation - U. S. Office of Education National Seminar on Innovation, Honolulu, Hawaii, July, 1967. (ED 027 600)

The adoption stage in planned change is discussed in terms of the following activites: (1) trial, (2) installation, and (3) institutionalization. The adoption process is seen as involving the training of local personnel, arranging appropriate scheduling, modifying available space, and the like. It establishes the invention as part of the ongoing program and, over time, converts it into a "non-innovation."

Guba, Egon G., and Daniel L. Stufflebeam. "Evaluation: The Process of Stimulating, Aiding, and Abetting Insightful Action." An Address delivered at the Second National Symposium for Professors of Educational Research, Boulder, Colo., November, 1968.

The authors note that completed evaluations have been far from adequate, and assert that the fundamental problem is a lack of adequate conceptualizations regarding the nature of educational evaluation in the context of the emerging problems of educational change. They discuss six conceptual problems:

1. Inadequacies of present definitions of educational evaluation.
2. A lack of understanding of the different educational settings within which evaluation must be conducted.
3. A lack of understanding of generalizable information requirements which educational evaluation studies must meet.
4. The lack of a valid structure for the generalizable parts of evaluation design.

5. The lack of concepts needed to organize and operate evaluation systems.
6. The lack of an appropriate set of criteria for judging the worth of evaluation strategies, designs, instruments, reports, etc.

Five premises which form the basis for their proposed theory are explained:

1. The purpose of evaluation is to provide information for decision-making; to evaluate, therefore, it is necessary to know the decisions to be served.
2. Different educational settings require different evaluation strategies; thus, a valid evaluation theory should be grounded in sound conceptualizations of the different decision settings to be served.
3. Within any setting, different types of decisions require different types of evaluation designs; therefore, a generalizable and efficient evaluation theory should be based upon a parsimonious conceptualization of the types of decisions and evaluation designs which are generalizable to all educational settings.
4. While the content of different evaluation designs varies, a single set of generalizable steps can be followed in the design of any sound evaluation.
5. Since evaluation studies should answer questions posed by decision-makers, designs for such studies should satisfy criteria both of scientific adequacy and of practical utility.

Educational evaluation is defined as the process of obtaining and providing useful information for making educational decisions. Four classes of educational decision situations are described: (1) decisions to effect large changes supported by a high level of relevant understanding, metamorphism; (2) decisions to effect small changes supported by a high level of relevant understanding, homeostasis; (3) decisions to effect small changes supported by a low level of relevant understanding, incrementalism; and (4) decisions to effect large changes supported by a low level of relevant understanding, neomobilism. The authors assert that all educational decisions may be unambiguously and exhaustively classified into four types: (1) intended ends (goals), planning decisions to determine objectives; (2) intended means (procedural designs), structuring decisions to design procedures; (3) actual means (procedures in use), implementing decisions to utilize, control and refine procedures; and (4) acutal ends (attainments), recycling decisions to judge and react to attainments. They feel that those four types of educational decisions are respectively served by four special types of evaluation: (1) context evaluation, which services planning decisions; (2) input evaluation, which services structuring decisions; (3) process evaluation, which services implementing decisions; and (4) product evaluation, which services recycling decisions. The process of evaluation is described under the following headings: (1) focusing the evaluation, (2) collection of information, (3) organization of information, (4) analysis of information, (5) reporting of information, and (6) administration of the evaluation.

Gutenschwager, Gerald A. "Social Reality and Social Change," Social Research, XXXVII (March, 1970), pp. 48-70.
The author criticizes the mechanistic view of the social order and social change which depends to a large extent upon the simple causal link and the concept of equilibrium. He attempts to describe a multi-layered perspective of the overall process of social change.

Hardy, Kenneth. "The Subtle Art of Persuasion," Business Quarterly, XXXIV (Autumn, 1969), pp. 57-63.
Five models of persuasion are described: (1) the association model, (2) the facts model, (3) the motivation research model, (4) the social model, and (5) the personality model. In the association model, communication attempts to link two ideas together; one idea is well accepted while the second idea may be novel. In the facts model, the communicator hopes to change the behavior of the audience through enlarging its field of knowledge. The motivation research model assumes that if attitude change is to take place, the influencer must understand the basic drives behind the particular set of attitudes which he wishes to change. The social model emphasizes the rewards and punishments of group affiliations. In the personality model, the communicator views the audience as one personality and structures the communication in light of his assumption about the particular personality type of the audience in question.

Hartenberger, Walter, and Elaine Rothrock. "A Change Recipe for Small Rural Schools," NASSP Bulletin, LIV (October, 1970), pp. 89-94.
The authors see the following as stages in the change process: (1) a needs assessment, (2) identifying options, (3) building skills, (4) installing options, and (5) evaluation. They offer twelve ground rules for administrators to follow in promoting change.

Henrie, Samuel N., and Higgins D. Bailey. "Planning Carefully or Muddling Through: An Educators' Choice," Journal of Secondary Education, XLIII (December, 1968), pp. 349-352.

The authors present a checklist for the planning and implementation of educational programs under the following headings: (1) clarifying goals, (2) defining objectives, (3) defining missions and analyzing them as tasks; (4) sequencing of tasks; (5) setting up a management system; and (6) setting up an evaluation system.

Hobbs, Daryl L. "The Study of Change as a Concept in Rural Sociology," Theory Into Practice, V (February, 1966), pp. 20-24.

The social change process is viewed as involving the following stages: (1) development of innovations, (2) diffusion of innovations, (3) legitimation or advocacy of innovations, (4) adoption, and (5) adjustment or adaptation of the system to the innovation. The author emphasizes that the principal forces for educational change are external to local educational systems and that local based, internal forces are oriented toward maintaining stability.

House, Ernest R., Thomas Kerins, and Joe M. Steele. "The Demonstration Center: An Appraisal of the Illinois Experience." Urbana: Center for Instructional Research and Curriculum Evaluation, University of Illinois, December, 1970.

Five major features of the research and development model of educational change, which the authors contend is the most favored at higher policy levels in the educational establishment, are listed:

1. There is a rational sequence of activities which moves from research to development to packaging.
2. Planning must occur on a large scale.
3. A division of labor separates roles and functions in the overall process.
4. A passive consumer awaits acceptance of the innovation if it is delivered properly.
5. A high initial development cost is necessary to eventual success.

The purpose of this paper was to examine the form, function, and effectiveness of demonstration centers in Illinois, and in doing so to test indirectly the research and development model of change. The centers were seen as successful at the immediate goals of awareness (dissemination) and acceptance (demonstration), but not at the ultimate and most important goal of implementation (adoption). This failure is attributed to the execution of the plan by the centers and the deficiency of the change model itself. With regard to execution of the plan, there was little evidential assessment of the demonstration programs, the feasibility of adopting demonstrated activities was not emphasized, and follow-up was far less than that prescribed by the state. The fault in the change model lies in the assumption of a passive user population which is shaped by the dissemination process itself. The authors contend that the variables controlling the would-be adopter's everyday world in his home district are of far greater importance. The variables that influence whether he will adopt are those that shape his home environment. The findings in this study are consistent with the "social interaction" change model which sees change as a result of the social relations network within the adopting unit.

Howe, Harold. "Education for National Priorities." Paper presented at the President's National Advisory Conference on Innovation, Washington, D.C., September, 1968.

This paper discusses the aims of Title III of the Elementary and Secondary Education Act (the author was U.S. Commissioner of Education). These aims concern means of introducing change into education by funding innovative programs. The related problems are seen to be the inherent conservativism of the population and of school administrators, antagonistic attitudes of some innovators, selectivity in evaluating projects applying for funds, the competition for funds by traditional programs to serve the needy, and racial segregation. The author feels that one of the aims that Title III projects ought to have is the demonstration of the necessity of desegregation, that they ought to involve community resources, that they should aid in gaining influence for the disadvantaged in the running of school systems, and that they should be a means of changing the traditional goals of school systems.

Janowitz, Morris. "Alternative Models of Change for Inner-City Schools," The Quality of Inequality: Urban and Suburban Public Schools. Chicago: University of Chicago, 1968.

The author maintains that the influence of politics and politicians on the schools is growing and that this has led to at least two new ways of viewing inner-city schools: as substitutes for sub-standard family environments (the Mental Health Model) and as counteractions to sub-standard family environments (the Early Education Model). He explains and criticizes two alternate models: the Specialization Model and the Aggregation Model, both of which focus on changing the behavior of the teacher. The former concentrates on strengthening the teacher's total role in the classroom. He sees the handicaps of such models in the fact that criminal cultural ideas have invaded the thinking of slum-school students, invalidating any teacher-centered model.

Jung, Charles, and Ronald Lippitt. "The Study of Change as a Concept in Research Utilization," Theory Into Practice, V (February, 1966), pp. 25-29.

The authors view planned change as the inclusion of the following basic problem-solving phases in adapting to an action concern: (1) identification of the concern; (2) diagnosis of the concern; (3) retrieval of relevant knowledge and derivation of implications from that knowledge; (4) formulation of action alternatives; (5) feasibility testing of selected action alternatives, including training and evaluation; and (6) adoption and diffusion of successful alternatives. The authors recommend the utilization of linkage roles between practitioners and scientists.

Keil, Ellsworth C. "A Structure for Innovation in Education," Educational Technology, IX (October, 1969), pp. 35-40.

The author believes that controlled change is but one aspect of innovation. He tries to differentiate innovation from change on the grounds that innovation assumes that what is proposed can be consciously and planfully justified on the basis of commonly accepted public criteria. He suggests the following concepts as guidelines for the further development of criteria for evaluating innovative strategies:

1. The socio-political complexity of the school as a social institution must be reflected in any attempt to enable it to do its assigned tasks better or more efficiently.
2. The structure ought to be both information-producing, in the sense of research knowledge, and information-consuming, in the sense that programs and activities derive from previous research and/or technology.
3. The structure ought to permit self-correction in the sense that on-going discoveries become a part of the basis on which new programs are designed.
4. The structure ought to reflect an accommodation to the fact that a systematic (i.e., systems) approach to school problems requires substantial amounts of technical competence from widely disparate groups.
5. Geographic, institutional and academic departmental separation of technical expertise from the school system must be overcome.
6. Mechanisms by which program experiences and results are disseminated and used as a basis for policy decisions must be clarified so that the potential effects of such dissemination are public knowledge.
7. The administrative structure under which an innovative program operates cannot be autonomous from those who execute the program.
8. The approach ought to structure relationships in such a way as to make it possible for participants in an

innovative program to develop, test and fix new behavior patterns.

9. The structure must provide skills and resources required to solve practical problems.

Kohl, John W. "A Conceptual Tool for Implementing Change," Journal of Secondary Education, XLIII (November, 1968), pp. 324-25.

The author discusses the awareness-interest-evaluation-trial-adoption model of the change process, derived from diffusion research in rural sociology.

Kreitlow, Burton W., and Teresa MacNeil. "A Model for Educational Improvement." Paper presented at the Annual Meeting of the American Educational Research Association, Los Angeles, February, 1969.

The authors's view is that professional educators and laymen will deal with the process of change by default or by design. They describe a design (model) which, they feel, can switch the focus from mere change to positive action.

Kreitlow, Burton W., and Teresa MacNeil. The School Board and a Model for Educational Improvement. Madison: University of Wisconsin, 1970.

The authors believe that all school districts are influenced by and must deal with external forces and that the school board is the body most able to block forces for change or improvement. Structures for school administration are suggested to facilitate such changes.

LaPradd, Charles W., and Avon A. Bonner. "An Innovation in Guidance at St. Johns River Junior College: Putting Theory into Practice." (n.p.), (n.n.), 1968. (ED 028 782).

The authors detail the installation of a guidance program in a junior college.

Lippitt, Ronald. "The Use of Social Research to Improve Social Practice," American Journal of Orthopsychiatry, XXV (July, 1965), pp. 663-669.

The author describes six patterns or models for the use of scientific resources. Three of the patterns or models import change resources from outside the system. They are: (1) derivation of action designs from relevant research findings, (2) adoption of experimentally tested models of practice, and (3) diffusion between practitioners. The other three models or patterns develop the needed knowledge resources within the system. They are: (4) diagnostic team with feedback, (5) internal action-research process, and (6) training of consumers to be open to the use of science. The author also describes six distinctive features of social practice which make innovation difficult:

1. Significant adoptions of new practice require significant changes in the values, attitudes and skills of the social practitioner.
2. Most significant changes are really adaptations rather than adoptions of the innovations of others.
3. The concept of social invention has not been developed adequately.
4. The practitioner gets very little feedback about the effectiveness of his adoption effort.
5. The ways in which social practice is organized provide little stimulus for the practitioner to take risks in searching for and using new resources.
6. Social practice fields have not developed the networks, procedures and manpower resources necessary to link basic and applied research to operating practice.

Litwak, Eugene. "Comments on Professor Trows' Paper Entitled 'Methodological Problems in the Evaluation of Innovation'." Paper presented at the Symposium on Problems in the Evaluation of Instruction, University of California, Los Angeles, December, 1967. (ED 031 819)

Different situations require different evaluations. Four factors which should be considered are: (1) current state of knowledge; (2) cost of the evaluation process in terms of time, manpower, or general economic resources; (3) controllability of independent variables; and (4) complexity of the stimulus. All possible combinations of these factors are presented as a "multiple" model theory of evaluation.

Mangione, Samuel. "Bringing Perspective to the Change Situation," Educational Leadership, XXVII (January, 1970), pp. 359-362.

The author emphasizes that no clear blueprint, strategy or process exists which can be applied successfully in all situations and that there are various models and strategies from which a potential change agent can extract ideas that may be appropriate for his particular situation. He discusses the following elements of change: (1) need for involvement, (2) climate for change, (3) need identification and assessment, (4) establishment of priorities, (5) searching for solutions, and (6) implementation.

Marien, Michael. "The Basic, Long-Term Multifold Trend in Education," The Futurist, IV (December, 1970), pp. 220-223.

The "Basic, Long-Term Multifold Trend" (BLTMT), adopted from Kahn and Wiener, involves:

1. Increasingly sensate cultures (empirical, secular, humanistic, hedonistic).
2. Bourgeois, meritocratic elites; literacy and education.
3. Institutionalization of change and increasing tempo of change.
4. Population growth, urbanization, and megalopolitanization.
5. Worldwide industrialization and modernization.

This article represents an initial attempt to outline a BLTMT for education. Conceived as a trend from closed teaching systems to open learning systems, the BLTMT for education is a distillation of empirical trends, forecasts, and prescriptive future states at all levels of education, and offers an overview of the transformation of present day schools into learning environments that will better suit men's needs.

Martino, Joseph. "Forecasting for Research and Development," The Futurist, III (August, 1969), pp. 107-108.

The author groups research and development (R&D) activities in terms of four categories: (1) research, (2) technology advancement, (3) product development, and (4) test and evaluation. He defines each category and discusses the information needs of each category.

Mendez D., Alfredo. "Social Structure and the Diffusion of Innovation," Human Organization, XXVII (Fall, 1968), pp. 241-249.

Tracing the diffusion of innovations through time in different societies offers an opportunity to analyze these differential rates of cultural change and the correlates of this change in the social system. It has been demonstrated that the diffusion of innovation follows the same general pattern, regardless of the vehicles of change and of cultural and structural differences. For practices which have gained nearly universal adoption, this pattern is usually described as an S-shaped curve, in which the vertical axis represents the cumulative percentage of individuals who have adopted the practice and the horizontal axis represents the time at which they adopted. The author examines the adoption curve in the context of a "model" of communication and adoption. Three consecutive steps are considered in the model: (1) new information comes to individuals first from outside the community through weak but viable channels of communication; (2) subsequent flow of information is accomplished through the same channels, augmented by a flow of messages through "local" channels; and (3) innovation is passed from generation to generation, while the other channels may continue to be operative. In accordance with the model, the author describes four major components of diffusion: (1) the intensity of the outside stimulation and its distribution through time; (2) the distribution of receptive individuals in the social network which, in turn, depends both on the individual's proclivity toward change and on the fitness of the practice to the culture; (3) the time lapse required for an adopter to transmit information or otherwise exert innovative influences on other individuals (the absolute velocity); and (4) the pattern of interpersonal contacts through which information and other pressures for change travel, or the range of influence exercised by each adopter.

Merriman, Howard O. Evaluation of Planned Educational Change at the Local Education Agency Level. Columbus: Evaluation Center, Ohio State University, February, 1967. (ED 025 042)

Context, input, process, and product evaluations are each discussed in terms of the following: (1) identification of information needs, (2) decision rule criteria, (3) information system specifications, (4) data collection, (5) data organization and reduction, (6) data storage and retrieval, (7) data analysis, and (8) reporting.

A Model for Innovation Adoption in Public School Districts: Research on the Characteristics of Selected School Systems as They Relate the Need for Appraisal, Acceptance, and Use of Innovations. Final Report. Cambridge, Mass.: Arthur D. Little, Inc., March, 1968. (ED 022 262).

Several change models are reviewed and found to be inadequate in defining the process of innovation as it is encountered in local school districts. The report describes a model which purportedly adequately defines this process. The model is only for a local school district and assumes that the design and evaluation stages of research and development models are completed. The model is one of innovation adoption. It assumes that an initiating mechanism and a sustaining mechanism must be simultaneously present in some force exceeding a very modest threshold value before an innovation adoption can occur. An initiating mechanism is defined as an activity by means of which information about innovations designed elsewhere is brought into the school district. A sustaining mechanism is defined as a characteristic of the school district which acts primarily to establish a climate within which initiating mechanisms can be effective. Performance information about the effects of an adoption and readiness for further adoptions and about overall performance of the school district's educational system is related to the model.

Niehoff, Arthur H., and J. Charnel Anderson. "The Process of Cross-Cultural Innovation." Alexandria, Va.: Human Resource Research Office, The George Washington University, August, 1967.

The authors attempted to formulate a general theory of technical change as a process in which an innovation is introduced into another culture by an innovator, and during which there is reaction by the members of the recipient culture and ultimate rejection or acceptance of the new idea or technique. The methodology utilized was the collection of 106 published case histories describing specific efforts to introduce innovations into other cultures, and the subsequent isolation of factors related to the innovator, recipient groups, and the final outcome. Twelve factors, the first ten representing the action of the innovator and the last two representing the reaction of the recipients, were isolated. The interaction between and among these two sets of factors may bring about the integration of the innovation into the culture of the recipient group, or it may bring about rejection. The twelve factors are: (1) Communication (established), (2) Role (image created), (3) Demonstration (of innovation), (4) Participation (obtained), (5) Traditional Culture (utilization of), (6) Environment (utilization of), (7) Timing (utilization of), (8) Flexibility (of implementation), (9) Continuity (of implementation), (10) Maintenance (established), (11) Motivation, and (12) Traditional Culture.

Novotney, Jerrold M. "How to Manage Change," *American School Board Journal*, CLV (December, 1967), pp. 25-26.

The author offers six concepts in the formation of his change model: (1) objectives, (2) inventory of resources, (3) organization, (4) operation, (5) evaluation, and (6) alteration. He believes that these six concepts should operate as a continuous process.

Novotney, Jerrold. *Monitoring the System: Managing Change.* Santa Ana, Calif.: Orange County Schools Office Supplementary Educational Center, February, 1969.

The author describes a change model which is based upon seven key concepts: (1) analysis, (2) objectives, (3) inventory of resources, (4) organization, (5) operation, (6) evaluation, and (7) alteration. He believes that, taken together and in sequence, these seven concepts form a framework for solving any problem of change management. He posits that the successful management of change depends, in large part, on the personality and leadership skills of the change agent.

Owen, Joslyn. "Educational Innovation: The Human Factor," Journal of Educational Administration History, II (June, 1970), pp. 46-53.

The author, in attempting to assess the usefulness of models of the process of innovation in British education, criticizes change models on the following grounds: (1) they tend to generalize and oversimplify; (2) the detail in each model is selected for its appropriateness to a particular purpose and this purpose is frequently unclear; (3) they tend to miss the flavor of the classroom; (4) they often miss the nuances of negotiation; (5) many models appear to describe situations in which the superordinate's prescription of curriculum is still a matter of the present or of the very recent past; and (6) they miss something of the organic, self-modifying nature of the process of renewal. The author doubts the efficacy of attempts to try to apply models which have been found useful in agriculture, medicine or other highly rationalized pursuits to education. He believes that the degree of resistance and facilitations which innovation meets seems to differ according to what is being sold, who is selling it, his purpose in doing so, and the person to whom he is selling it.

Planning and Implementing Change in Ontario Schools. A Report of the Committee on the Implementation of Change in the Classroom. Toronto: Ontario Institute for Studies in Education, (n.d.). (ED 019 737)

An adoption model of change is described. The model has three stages, and incorporates nineteen activities.

Purdy, Ralph D. "The Public--and Innovation," Educational Leadership, XXV (January, 1968), pp. 296-299.

The author views innovation as a process. He notes that a concept, or proposed change, does not become innovational until it has attained three characteristics: (1) it must have meaning to others and be understood by others, (2) it must pass the test of acceptance by others as worthy of implementation, and (3) it must begin to be generally implemented. The author sees innovation as a three phase process: (1) the philosopher conceives, (2) the interpreter translates what the philosopher has conceived, and (3) the implementer puts into practice what the interpreter has translated from the philosopher. The following limiting factors to innovation in education are described: (1) failure to establish effective communication, (2) internal staff conflict and resistance, (3) lack of risk money, (4) lack of a clear definition or understanding of what is proposed, (5) absence of research in designing and planning the program of an innovational concept, (6) limited evaluation, (7) legal obstructions, and (8) excessive demands on the time and energy of a leader. The author sees the following as facilitating factors: (1) evidence of a basic philosophy of life and education which stimulate and encourage innovation and change; (2) an organization, structure and system that permits, encourages, and facilitates change; (3) leadership that is dedicated to study, planning and implementation of adopted plans for growth and improvement; (4) expectations for a high quality of educational achievement; (5) situational factors which tend to promote a high degree of internal security; (6) the presence of motivational factors; and (7) continuous and creative evaluation.

Randall, Robert S. "An Operational Application of the Stufflebeam - Guba CIPP Model for Evaluation." Paper presented at the Annual Meeting of the American Educational Research Association, Los Angeles, February, 1969.

The author describes an application of an evaluation system to innovative projects that are planned, designed and validated. Different types of decisions are related to the kinds and sources of information necessary.

Roberts, Tommy L. "A Theoretical Exemplar of System Design, Implementation, and Appraisal: The Bartlesville System." Stillwater, Okla.: Research Foundation, Oklahoma State University, 1969. (ED 029 325)

The author describes a paradigm of research and system development in education, which incorporates nine modules: (1) task assignment, (2) conceptualization, (3) design, (4) simulation, (5) field trial, (6) monitored implementation, (7) evaluation, (8) implementation, and (9) projection. Each of the modules is related to planning, appraising, and providing steps.

Rogers, Everett M., and Lynne Svenning. "Change in Small Schools." Paper presented at the National Working Conference on Solving Educational Problems in Sparsely Populated Areas, Denver, Colo., March, 1969. (ED 029 749)

The authors present an in depth discussion of educational change from five interrelated perspectives: (1) invention, (2) diffusion, (3) decision, (4) adoption-rejection, and (5) consequences. They believe that educational change is characterized by: (1) distance between inventors and potential users; (2) many barriers to efficient diffusion of new ideas and practices; (3) system, rather than individual, decisions; (4) adopters who are very often different from those making the innovation decisions; and (5) illusive and only vaguely apparent results.

Rogers, Everett M., and Lynne Svenning. Managing Change. San Mateo, Calif.: Operation PEP, September, 1969.

An eight step model for managing change is presented:

1. Define the objectives for the specific change (innovation-adoption).
2. Investigate the alternative innovations available that may meet the defined objectives.
3. Define, distinguish, and analyze the target, decision, and adoption audiences.
4. Define the steps that must be taken with each of these audiences to reach a decision, secure adoption, and achieve the objectives of change.
5. Select and employ those communication and diffusion principles most relevant to the specific change situation and develop change strategies to achieve previously-defined objectives.
6. Plan to integrate the innovation in the on-going system.
7. Evaluate the effects of the change.
8. Diffuse your findings.

Rogers, Everett M., and Nemi C. Jain. "Needed Research on Diffusion within Educational Organizations." Paper presented at the National Conference on the Diffusion of Educational Ideas, East Lansing, Mich., March, 1968.

This paper discusses needed methodological approaches to the study of diffusion within organizations and of potential conceptual emphases. Two methodological approaches are discussed, relational analysis and structural analysis. With regard to relational analysis, the authors stress that it is more appropriate to utilize relationships, transactions, pairings, chains, etc., as our units of analysis in diffusion inquiry, rather than individuals. In discussing structural analysis, it is stated that social structures have an important influence on individual behavior, including the adoption of new ideas, and is, therefore, relevant to diffusion inquiry. Four potential conceptual emphases in diffusion research in organizations are discussed:

1. Diffusion effects variables: These are the dependent variables in most studies, the variables which reflect the immediate effects of the diffusion of innovations.
2. Communication variables: This category includes dimensions indicating the nature and amount of communication in an on-going organization, such as the number of relevant communication messages, accuracy of upward communication, etc.
3. Social system variables: This category refers mainly to the structural characteristics of an organization.
4. Consequences variables: This category includes variables which reflect the consequences or effects of innovations in the organization, such as productivity, morale, etc.

Sanders, Donald P. "The Study of Change as a Concept in National Development," Theory Into Practice, V (February, 1966), pp. 30-33.

The author believes that the solutions to problems of educational changes require the following actions: (1) explicating the goals of the nation in precise and operational terms, (2) determining priorities among these goals, (3) determining the technical feasibility of attaining these goals, (4) adjusting priorities and the goals themselves in relation to the capabilities of the educational system and resources available to it, (5) deciding on the plan to be followed, and (6) executing the plan and continually readjusting it to suit changing conditions. The author believes that planners should concentrate on the identification of needed changes, while change specialists should concentrate on mechanisms for bringing about improvement.

Shinn, Ridgway F. "An Analysis of Curricular Change: The Providence Experience." Paper presented to the National Council for the Social Studies, (n.p.), November, 1968. (ED 028 138)

The author details the Providence Social Studies Curriculum Project in terms of the differential involvement of categories of people in stages in the process. The stages in the process are as follows: (1) developing objectives; (2) making a curricular design; (3) selecting content and vocabulary; (4) organizing materials into draft units including specific suggestions for teaching methodology and learning experiences; (5) using materials on a pilot basis; (6) evaluating materials after pilot use; (7) rewriting and, if necessary, redesigning; (8) training teachers to spread materials to an entire grade level; (9) spreading materials; and (10) continuous evaluating, rewriting, and changing within the basic framework. The categories of people are: (1) social studies curriculum committee, (2) social studies curriculum theorist, (3) academic specialists, (4) project staff, (5) learning theorist, (6) classroom teachers, (7) school principals, and (8) superintendent and other administrators.

Soltis, Ronald J. "A Systematic Approach to Managing Change," Management Review, LIX (September, 1970), pp. 2-43.

The Managed Change Technique (MCT) model is outlined in five phases: (1) business analysis, (2) general design, (3) detail design, (4) implementation, and (5) appraisal.

Stankard, Martin. "Development of Quantitative Models of the Educational Process." Paper prepared for the International Meeting of the Institute of Management Sciences, Cleveland, September, 1968. (ED 024 116)

To bring the principles of management science into education, the author attempts to devise a quantitative model of the educational process.

Stroud, Maidred Morris. "A Study of the Adoption Process of a Family Living Practice by Homemakers in a Selected North Carolina County." Raleigh: Department of Agricultural Information, North Carolina State University, July, 1968. (ED 028 359)

A study was conducted which had three specific objectives: (1) To determine the stage at which homemakers are in the adoption of a specific family living practice--"water blanching vegetables for freezing': Awareness, interest, evaluation, trial, adoption; (2) To identify the informational sources which have been used by homemakers in each stage of the adoption process; (3) To determine the extent to which each of the following variables is associated with the current stage at which homemakers are in adopting the practice "water blanching vegetables for freezing": (a) Personal--age, level of formal education, (b) Social--participation in organizations, (c) Situational--place of residence, time length of freezer ownership. The results demonstrated that the respondents' adoption rate was high for all four steps of the homemaking practice under consideration, and that the respondents had been influenced by more than one source of information at each stage of the adoption process. Two of the independent variables, age and time length of freezer ownership, were significantly associated with the adoption of the first step in the water blanching process. Only time of freezer ownership was significantly associated with the second and third step in the process, and none of the variables was associated with the fourth step.

"A Structure and Scheme for the Evaluation of Innovative Programs," The Epic Brief, Tucson, Ariz.: EPIC Evaluation Center, (n.d.). (ED 028 103)

Objective evaluation of school programs is defined as a process in which a school staff collects information used to provide feedback as to whether or not a given set of objectives has been met. The Evaluative Programs for Innovative Curriculums (EPIC) four-step scheme of objective evaluation is based on a three-dimensional structure of variables influencing instructional programs: (1) The Instructional Dimension (organization, content, method, facilities, cost); (2) The Institutional Dimension (student, teacher, administrator, educational specialist, family, community); (3) The Behavioral Dimension (psychomotor domain, affective domain, cognitive domain). Step 1 (Planned Program) involves identification of the variables felt to be affecting the instructional program under consideration, the combining of variables into factors (one variable from each dimension), the writing of behavioral objectives, and the development of the evaluative design. Step 2 is program description and data gathering; Step 3, data analysis; and Step 4, the decision making recycling process.

Tarino, Charles A. "University-School: Partners in Program Development." Unpublished Doctoral Dissertation, University of Pittsburgh, 1970.

The basic premise of this thesis is that the educational enterprise has lagged badly in utilizing the concepts of research and development. The greatest deficiency is in the area of educational program development. The federally sponsored R & D organizations are heavily oriented towards basic research and, as a result, too few programs are actually introduced into the schools. Many worthy programs that do reach the school setting fail, because the focus is solely upon the content of the program to the exclusion of the effects of the change process itself. The formal R & D function can be complemented by the efforts of other organizations. One such organization is a regional study council with its existing university-school relationship. This thesis places the university component of such a consortium in the role of a broker, introducing its participating school districts to sources of new inputs and providing these sources with appropriate laboratory settings. In addition, the university-based element assumes the role of facilitator of change, developing in the school setting the program support needed and overcoming resistance to the installation of change inherent in bureaucratic organizations. An indigenous cadre of school personnel, trained by the facilitator of change, is the instrument through which program support is developed.

Weiss, Edmond. "A Model for Systematic Educational Dissemination." Paper presented to the Middle Atlantic ESEA Title III Dissemination Conference, Washington, D. C., January, 1969.

The author presents a model for systematic dissemination. The model has the following eight activities: (1) form objectives, (2) weight objectives, (3) analyze and classify audiences, (4) survey audience interests and communication practices, (5) match project components and message formats to audience, (6) schedule campaign, (7) implement campaign with feedback mechanisms, and (8) evaluate strategies.

Wolf, Richard. "A Model for Curriculum Evaluation," Psychology in the Schools, VI (1969), pp. 107-108.

The author believes that the main task in curriculum evaluation is to determine whether a particular program has attained its objectives. With tongue in cheek, he describes five methods of evaluating educational programs: cosmetic, cardiac, colloquial, curricular, and computational.

Worcester, Robert M. "Managing Change," Long Range Planning, III (September, 1970), pp. 31-35.

The author views the change process as consisting of three major stages: (1) stability, (2) instability, and (3) restabliization. He offers the following suggestions to the manager of change: (1) avoid sudden and sweeping changes, (2) use the company's reward structure to promote change, (3) use disagreement constructivity, (4) provide a reasonable margin for error, (5) respect group values and interest in making changes, and (6) train personnel in creative problem solving.

Yeager, John L. "Evaluation as an Essential Tool in the Field Testing and Dissemination of Educational Products," SRIS Quarterly, I (Summer, 1968), pp. 20-22.

The author describes the three stages of development, field trial, and dissemination of an innovation in terms of what is involved in each of the three stages.

III. CHANGE STRATEGIES AND TECHNIQUES

Abbott, Max G. "Center for the Advanced Study of Educational Administration," Journal of Research and Development in Education, I (Summer, 1968), pp. 17-29.

The general objective of the Center for the Advanced Study of Educational Administration is to develop organizational and administrative arrangements for the educational enterprise that can accommodate rapidly changing instructional techniques, strategies and goals. This objective was developed on the basis of three major assumptions:

1. Increasingly sophisticated research on instructional processes, the psychology and social psychology of human learning, and curriculum design will produce potentially revolutionary teaching procedures in the next thirty years.
2. Existing organizational forms and administrative practices in the school may not be suited to the emerging instructional techniques.
3. The absence of appropriate organizational and administrative practices can seriously inhibit the introduction of new instructional procedures and limit their utility once they are introduced.

Allen, Dwight W., and Robert L. Sinclair. "The Center for Study of Educational Innovations: A Statement of Intent: Current and Future Projects." Amherst, Mass.: School of Education, University of Massachusetts, 1968. (ED 028 113)

The Center for Study of Educational Innovations is described as intending to experiment with research, development, and implementation in four areas: (1) institutional structure, (2) curriculum development, (3) instructional strategies, and (4) teacher education.

Ammerman, David. "We Resisted the Urge to Plunge Right In," The Abington Conference '69: Strategies for Change. Abington, Pa.: Abington Learning Associates, 1969.

To avoid some of the rough spots in change efforts, the author suggests the following: (1) make changes gradually; (2) prepare, with the involvement of as many teachers as possible, a position statement setting down the guidelines; (3) build a program that fits needs and goals, drawing upon other experiences and designs; (4) encourage teachers to visit schools that use innovative approaches; (5) make sure you are adequately staffed to provide teachers with the individual counseling and support needed during the change; (6) get firm support for the entire program from the board of education; and (7) enlist cooperation and support from all departments.

Asbell, Bernard. "Schools Hire Out the Job of Teaching," THINK, XXXIV (September-October, 1970), pp. 5-9.

This article describes performance contracting, concentrating on the Texarkana project, and sees it as the new wave of the future. It places the blame for failure on teachers alone and contends that all criticisms of performance contracting come from lazy or ill-intentioned classroom teachers.

Bailey, Stephen K. "Significance of the Federal Investment in Education R & D," Journal of Research and Development in Education, II (Summer, 1969), pp. 29-35.

The author emphasizes the following points:

1. Educational research and development (R & D) efforts have been intermittent and diffused, with little if any perceptible effect upon educational behavior.
2. Impressive results from educational R&D can be anticipated only when adequate attention is paid to the diffusion and widespread utilization and evaluation of findings over a long period of time.
3. The Federal government should develop a national strategy for educational R&D backed by appropriate structural and procedural changes, and by Presidential and Congressional commitments to long-range and substantial funding.
4. Crash priority attention should be given to producing the manpower needed to conduct the R&D and diffusion functions.

Bandy, George R. "Strategies for Change in Rural Communities." Paper presented at National Working Conference on Solving Educational Problems in Sparsely Populated Areas, Denver, Colo., March, 1969. (ED 029 726)

The author discusses the following considerations from the literature on change as they relate to rural education: (1) the slow rate of diffusion in education, (2) innovation from within or without, (3) the linking role (between researcher and practitioner), (4) change strategies, and (5) change agentry. The author concludes that attention to change strategies which account for the intelligent use of well-trained and well-developed linking agents can hasten the process of change in rural education, and that change agents in rural education should emphasize logic, training, persuasion, and demonstration of value over compensation and deprivation, political influence, or compulsion.

Baratz, Stephen S., and Joan C. Baratz. "Early Childhood Intervention: The Social Science Base of Institutional Racism," *Harvard Educational Review*, XL (Winter, 1970), pp. 29-50.

To place the present political and academic furor over the efficacy and future of such early-intervention programs as Head Start in perspective, the authors examine the basic concepts and assumptions upon which these programs are based, and determine whether existing data can support such an approach to the problem of educating children from the black ghettoes. They believe that the social pathology model, which is the basis for early-intervention programs such as Head Start, has led social science to establish programs to prevent deficits which are simply not there.

Barnes, Jarvis. "Instructional Media and the Teaching-Learning Process," *Educational Technology*, IX (December, 1969), pp. 59-62.

Because of the lack of consistent definitions of "innovation" and its various manifestations, communication about change among educators is difficult. The author describes an attempt by the Atlanta Public Schools to critically examine various approaches, settings and results, in the vernacular of the educator a "systems approach" to the problem of educational change.

Barro, Stephen M. *An Approach to Developing Accountability Measures for the Public Schools*. Santa Monica, Calif.: The Rand Corporation, 1970.

The author believes that the idea of accountability is gaining popularity and that school district management must be reformed if accountability procedures are to be implemented. Other results of such implementation might be the centralization of educational management at the Federal level, the establishment of merit-type pay schedules, the spread of performance contracting, increased community participation and the growth of non-traditional types of school systems. If the idea of accountability does succeed, then there will be a great need for means of measuring accountability, for deciding on nation-wide educational goals, for assigning procedures and for collecting and retrieving accountability data. The most complex needs will arise in the area of evaluating such data.

Behrendt, David. "Away With Tradition," American Education, VI (January-February, 1970), pp. 18-22.
The author explains how a small but growing number of Wisconsin elementary schools started sweeping tradition out the door by adopting and utilizing the "multiunit elementary school."

Bridges, Edwin M. "Student Unrest and Crisis Decision-Making," Administrator's Notebook, XVIII (December, 1969), pp. 1-4.
The author believes that the schools' abuse of authority, coupled with the trained incapacity of students for handling the verbal outpourings of zealous revolutionaries and the negative nature of other alternative responses open to students, auger a student change strategy based on confrontation and crisis induction. The author discusses three possible administrative responses to the problem of student unrest: (1) reform of classroom practices, (2) channels to handle student grievances and aspirations, and (3) administrative response to student-induced crisis.

Bright, James R. "Evaluating Signals of Technological Change," Harvard Business Review, XLVIII (January-February, 1970), pp. 62-70.
The process of turning a scientific concept into economic reality involves far more than just technological capabilities. Economics, sociology, politics, and sometimes ecology affect the rate and significance of technological progress. The author suggests that monitoring the environment for impending technological change can be useful to management in anticipating and responding to technological progress. Monitoring involves the following four activities:

1. Searching the environment for signals that may be forerunners of significant technological change.
2. Identifying the possible consequences (assuming that these signals are not false and the trends that they suggest persist).
3. Choosing the parameters, policies, events, and decisions that should be observed and followed to verify the true speed and direction of technology and the effects of employing it.
4. Presenting the data from the foregoing steps in a timely and appropriate manner for management's use in decisions about the organization's reaction.

Brody, Eugene B. "Preventive Planning and Strategies of Intervention," American Behavioral Scientist, XIII (September-October, 1969), pp. 126-132.

Strategies of intervention are discussed from four viewpoints: (1) public policy level intervention, (2) individual intervention, (3) intervention with groups, and (4) involuntary migration.

Casey, John J. "New Light on the Reliability of Indicators of Quality," IAR Research Bulletin, IX (May, 1969), pp. 1-3.

The author reports data which support the confidence shown by educational administrators and researchers in Indicators of Quality as a practical instrument for measuring events in the process of education.

Chase, Francis S. "The National Program of Educational Laboratories." Bureau of Research, Office of Education, U.S. Department of Health, Education, and Welfare. Washington, D. C.: U. S. Government Printing Office, 1969.

The author reports on a two year study of nine university based research and development centers and twenty regional educational laboratories. One of his conclusions is that successful research and development in education is, and will continue to be, both a science and an art. He also emphasizes that qualitative assessments are often more relevant than quantitative measurements.

Chase, Francis S. "R & D As Applied to Educational Change Under Crisis Conditions." Paper presented to the Conference on a National Agenda for American Education, Washington, D.C., July, 1969.

The author's view is that research and development operations produce their effects over time through systematic analysis and problem solving which lead to a clarification of objectives and a painstaking adaptation of means to ends. He mentions the paradox that faith in education is at an all time high, while confidence in the schools may be at an all time low. He believes that the regional educational laboratories and university based research and development centers have undertaken to perform functions not previously performed in education and are beginning to perform these functions in ways that could lead to a toning up of the entire educational enterprise.

Cherns, Albert. "Social Research and its Diffusion," Human Relations, XXII (June, 1969), pp. 209-218.

The author believes that the use of social research has hitherto been disappointing and could be much greater. Part of the reason for this state of affairs lies in a misconception of the process whereby research gets translated into action. The author feels that many people erroneously believe that pure research leads through applied research to development and from development to application, and cites evidence to prove that this is not the

case. He defines four types of research, purely basic research, basic operative research, operational research, and action research, and discusses each type in terms of five categories: (1) source of problem; (2) generality in terms of results and strategy; (3) primary diffusion channel; (4) secondary diffusion channel; and (5) feedback.

Cherns, Albert. "The Use of the Social Sciences," Human Relations, XXII (November, 1968), pp. 314-325.
The author describes three major ways in which research gets into use: (1) through change in the belief systems of people, (2) through diffusion of practice, and (3) through planned application of research which is specifically conducted for the organization and/or the people concerned.

Clear, Delbert K. "Decentralization--Issues and Comments," The Clearing House, XLIV (January, 1970), pp. 259-267.
The author believes that large urban school systems typically have been so centralized that neither diffuse decision making nor constituent control has occurred. He argues for the urgency and importance of decentralization, and suggests some guidelines for districts considering decentralization.

Coddington, Dean C., and J. Gordon Milliken. "Future of Federal Contract Research Centers," Harvard Business Review, XLVIII (March-April, 1970), pp. 103-116.
The authors report the highlights of the findings of their study of federal contract research centers. A description is given of the major characteristics of forty selected centers, and the arguments offered by both critics and supporters are itemized. Finally, they analyze the claims that the centers should be controlled more closely, discuss the problem of centers whose primary missions have been accomplished, examine the multiple-sponsorship question, and make predictions concerning the future role of such centers.

Coombs, Philip H. "The Need for a New Strategy of Educational Development," Comparative Education Review, XIV (February, 1970), pp. 75-89.
The author discusses four problems of adjustment relative to educational systems: (1) the gap between educational demand and supply, (2) the gap between resources and requirements, (3) imbalances between educational outputs and jobs, and (4) imbalance between formal and non-formal education. One of his conclusions is that a new strategy of innovation, replacing the old one of linear expansion, is necessary to give major emphasis to the qualitative aspects of educational development, namely promoting the kinds of educational changes required to adapt educational systems to the changing world around them and making them more efficient and effective.

"A Cooperative Plan for the Invention, Demonstration, and Evaluation of Innovative Practices Among Urban, Suburban, and Rural Schools." Rochester, N. Y.: Genesee Valley School Development Association, January, 1967. (ED 023 741)

A proposal is presented for a plan to meet the following educational needs of the nine county region of the Genesee Valley: (1) improvement of the quality of education in the region; (2) equalization of educational opportunity in the region; and (3) coordination and dissemination of information about the educational innovations in the region. Also included are the objectives, procedures, and emphasis of the plan, as well as a scheme for the evaluation and dissemination of information concerning the plan.

Counelis, James Steven. "Macro-Administration in American Higher Education, Some Research Directions." Paper presented to the Annual Meeting of the American Educational Research Association, New York, February, 1967. (ED 031 995)

Macro-administration is defined as theory and practice in the administration of trans-institutional and trans-societal organization. These organizations extend authority and control over multiple units within society. Three directions, which future research in macro-administration in American higher education might take, are given in the form of sub-paradigms derived from other sources, but applicable to higher education. The three sub-paradigms are: (1) the federation sub-paradigm, (2) the policy administration sub-paradigm, and (3) the empirical history sub-paradigm.

Daniel, Fred K. "Moving Toward Educational Accountability: Florida's Program," Educational Technology, XI (January, 1971), pp. 41-42.

The author discusses the Florida State Department of Education's program for accountability. The Florida Department of Education views accountability as a process of explaining the utilization of resources in terms of their contributions to the attainment of desired results. It is felt that for accountability to bring about maximum benefits, the following two conditions are necessary: (1) managers must master techniques for analyzing and explaining resource utilization and educational results; and (2) managers must have control over their resources - time, space, personnel, and money - so that uses for these resources can be modified when the desired results are not being attained. Five Florida projects have been conducted in order to provide managers with needed techniques and information: (1) statewide utilization of behavioral objectives, (2) differentiated staffing pilot projects, (3) programmed budgeting and cost effectiveness pilot projects, (4) facilities utilization studies, and (5) non-categorical allocation of funds for educational improvements.

Darland, D.D. "The Profession's Quest for Responsibility and Accountability," Phi Delta Kappan, LII (September, 1970), pp. 41-44.

The author notes that teachers cannot be held accountable for the results of their teaching unless they gain control over more of the factors that influence those results. Such control includes the control of the teaching profession as a group over the licensing of teachers, establishment of professional standards, the accreditization of schools of education and the governance of in-service training. Current demands from the public for teacher accountability without the concommitant teacher authority are viewed by teachers with distrust and resentment.

Daunt, Pat. "Innovation in the Comprehensive School," Forum for the Discussion of New Trends in Education, XII (Autumn, 1969), pp. 20-24.

The author's view is that innovation is exciting, but, even for a young and adventurous staff, exhausting. He feels that if substantial innovation is to be constant for the next five years at least, it is essential that critique of its processes be searching and radical.

Day, David E., and Louise Y. George. "Effecting Change in Inner City Schools: Some Reflections," Journal of Negro Education, XXXIX (1969), pp. 4-13.

It is argued that the degree to which the school can become relevant and productive is dependent upon: (1) teaching behavior or style, (2) the curriculum, and (3) teacher participation in decisions about curriculum and school organization.

Deardon, Ronald A., and Evelyn Valotto. The Change Process in Action: Kindergarten. Bailey Crossroads, Va.: Center for Effecting Educational Change, Fairfax County Schools, October, 1968. (ED 027 949)

A pilot kindergarten program supervised by the Center for Effecting Educational Change (CEEC), a planning, research, and development arm of the Fairfax County Schools, in 1967-68 is described. The programs' major objective was to serve as a vehicle for implementing kindergarten on a countywide basis. The programs' secondary objective, in keeping with the Title III concept, was to provide information to other school systems involved in planning or implementing a kindergarten program.

Deterline, William A. "Applied Accountability," Educational Technology, XI (January, 1971), pp. 15-20.

Accountability imposes three directives: specified performance capability will be produced; the instructional components must produce these results; and an empirical development and management process must be employed.

Dror, Yehezkel. "Prolegomena to Policy Sciences," Policy Sciences, I (Spring, 1970), pp. 135-150.

The author maintains that the following innovations in basic paradigms are necessary for the establishment of policy sciences as a new supradiscipline: (1) integration between various disciplines, and especially of social sciences with analytical decision approaches; (2) bridging of the "pure" vs. "applied" dichotomy; (3) acceptance of tacit knowledge as a scientific resource; (4) changes in interface between science and values; (5) broad time perspectives; (6) focus on metapolicies; (7) commitment to policymaking improvement; and (8) concern with extra-rational and irrational processes, such as creativity. Unique subjects of policy sciences, opened up by these paradigms, include, among others: (a) policy analysis, which involves critical changes in system analysis so as to permit application to complex policy issues; (b) policy strategies, involving determination of postures and main guidelines for specific policies, such as on degrees of incrementalism vs. innovation and on attitudes to risks; and (c) policymaking system redesign, including evaluation and improvement of the policymaking system.

Dror, Yehezkel. "Urban Metapolicy and Urban Education," Educational Technology, X (September, 1970), pp. 15-21.

The author proposes that innovative changes in both urban metapolicy and urban education are needed to meet present and future urban problems. Required changes in urban metapolicy include: (1) development of urban policy sciences knowledge; (2) invention of new urban policy tools; (3) explicit strategy determination; (4) new policy-contributing institutions and/or policy research organizations; (5) improvements of urban policymaking personnel; and (6) advancement of citizen participation. The following radical changes in urban education are needed to meet the needs of better urban metapolicies: (1) education of adults for more active roles in urban policymaking; (2) preparation of children for even more active future roles in urban policymaking; (3) training and retraining of urban policy practitioners for new patterns of urban policymaking; (4) training of new types of urban policy professionals; and (5) development of policy scientists.

Drummond, William H. "The Meaning of Application of Performance Criteria in Staff Development," Phi Delta Kappan, LII (September, 1970), pp. 32-35.

The author discusses the use of performance rating to assist the individual teacher to become more independent and more competent. This is achieved by aiming the rating scheme at increasing the professional development of the staff, rather than at rewards and punishments, by involving community groups in a responsible way and by integrating professional associations into the planning process.

Duncan, Merlin G. "An Assessment of Accountability: The State of the Art," Educational Technology, XI (January, 1971), pp. 27-30.

A system that will provide educational accountability should at least include the following:

1. It should measure program effectiveness based on stated real goal accomplishment in a time frame.
2. It should report results on a multi-dimensional format to the interested publics of the educational enterprise, both internal and external.
3. It should be a dynamic process that makes the educational system more responsive to the needs of society and its own clientele.
4. It should be related to comprehensive educational planning and show that the programs generated are economical in terms of opportunity costs.
5. The system by which accountability is satisfied should also be flexible enough to provide input to regenerate the system through constant evaluation and feedback which serves as a guide to program formulation, revision, or termination.
6. It should relate measurable educational goals to societal goals, and demonstrate the ability to interface educational systems with other public and private systems serving society.

Durkee, James. "The Challenge for Change," Agricultural Educational Magazine, XLII (October, 1969), pp. 83-84.

In regard to vocational agriculture, the author believes that the challenge for change is to let people know what teachers are doing, to continue to devise and adopt new practices in teaching vocational agriculture, to continue to support the efforts of supervisors, teacher educators and professional organizations, and to continue to improve the understanding of agriculture.

Durstine, Richard M. "An Accountability Information System," Phi Delta Kappan, LII (December, 1970), pp. 236-243.

The author makes eight points concerning an educational accountability information system:

1. A working system of accountability measures should be supported by a system for accountability information, embodied in an Office of Accountability Information.
2. The first step in this direction should be establishment of a pilot team to undertake developmental activities in this direction.
3. The system created through this pilot activity should be subjected to thorough and continuing development, testing, and evaluation.
4. The first activities chosen for the proposed system for accountability information should be aimed at areas where prompt (if limited) usefulness to the improvement of educational operations is likely; a more complete set of activities for the system should be developed from this base.
5. Any information system thus developed should be oriented towards service to its users; its operations and products therefore should be readily accessible and clearly defined.
6. The sum total of the activities suggested here is extensive. Adequate time, personnel, and other support are essential, especially in the exploratory pilot stages.
7. Though the job will be complex, a massive information network is not contemplated. Nor is the extensive use of data processing, though some will be necessary. A small, but vigorous and effective, beginning is to be sought.
8. The time, personnel, and cost needed to carry out this proposal cannot be accurately stated in a general review like this one, but must await a full and careful study in which its suggestions are accepted in principle.

Dyer, Henry S. "Toward Objective Criteria of Professional Accountability in the Schools of New York City," Phi Delta Kappan, LII (December, 1970), pp. 206-211.

The author advocates joint accountability of the entire school staff because a child's progress is determined by a multitude of transactions with many different people on the staff. Three general principles are embraced by the concept of accountability for the individual school as a unit:

1. The professional staff of a school is to be held collectively responsible for knowing as much as it can (a) about the intellectual and personal-

social development of the pupils in its charge and (b) about the conditions and educational services that may be facilitating or impeding the pupil's development.

2. The professional staff of a school is to be held collectively responsible for using this knowledge as best it can to maximize the development of its pupils toward certain clearly defined and agreed-upon pupil performance objectives.
3. The board of education has a corresponding responsibility to provide the means and technical assistance whereby the staff of each school can acquire, interpret, and use the information necessary for carrying out the two foregoing functions.

Edlefelt, Roy. "Differentiated Staffing — The Latest," Alaska Teacher, XVII (Winter, 1969-70), pp. 16-18.

Differentiated staffing is seen as a plan for recruitment, preparation, induction, and continuing education of staff personnel for the schools that would bring a much broader range of manpower to education than is now available. Such arrangements might facilitate individual professional development to prepare for increased expertise and responsibility as teachers, which would lead to increased satisfaction, status, and material reward.

"Educational Innovations." Seattle, Wash.: School Information and Research Service, June, 1963.

Six considerations are seen as affecting the success of an innovation.

1. The "administration" must not only approve but must be enthusiastic.
2. Teachers involved must be genuinely interested in the project.
3. A clear explanation of the whys and hows must be prepared in advance and available to all interested parties.
4. Adequate time must be given to participants to consider all angles and resolve major questions before the innovation is introduced.
5. In most cases, a truly scientific evaluation of results is impossible to get.
6. Even though a new method or different organization may not be better than the old one, the stimulus of aroused interest on the part of the participants pays off.

Etzioni, Amitai. "'R&D' and the Nation's Social Problems." Paper presented at the Conference on a National Agenda for American Education, Washington, D. C., July, 1969.

The author believes that technology can be used as a major source for serving social needs more effectively and rapidly.

Eye, Glen G., Martin B. Garrison, and Joel A. Kuhn. "Instructional Technology and Administrative Decisions," Educational Technology, IX (December, 1969), pp. 24-27.

The authors discuss some of the problems of the Committee on Technology and Instruction, which was created by the American Association of School Administrators.

Flanagan, John C. "Program for Learning in Accordance with Needs," Psychology in the School, VI (1969), pp. 133-136.

The goals, objectives and organization of Project PLAN (Program for Learning in Accordance with Needs) are discussed. The two primary goals of the program are to identify and define the needs for each young person between the ages of 6 and 18, and to develop procedures which will enable these young people to acquire the knowledge, skills, abilities, and appreciations which have been identified and defined. The five components of the program are discussed: (1) a comprehensive set of educational objectives, (2) the teaching-learning unit, (3) a set of tests, (4) a set of procedures for guidance and individual planning for each student, and (5) the evaluations and systems aspects.

Flight, David S. "Regional Laboratories and Educational Research and Development," Administrator's Notebook, XIX (November, 1970), pp. 1-4.

The author discusses the successes and failures of the network of regional educational laboratories (REL) funded by the United States Office of Education. There was no pattern evident to distinguish between a successful and an unsuccessful regional laboratory. Nevertheless, the author suggests two possible explanations for the relative success of some of the labs: (1) the successful labs were more competent technically, and (2) the directors of successful labs were able to cope with the accountability requests of the federal office as well as the local demands.

Foster, Richard L. "The Search for Change," Educational Leadership, XXV (January, 1968), pp. 288-291.

The author argues that systematic, organized change models, such as Clark-Guba's formulation, have limited utility for inducing change. He recommends supplementing such models with a more involved process of change.

Frinks, Marshall. "Toward More Effective School Personnel Utilization," Educational Technology, X (February, 1970), pp. 73-74.
Staff differentiation is viewed as a process and not as a product. The model of the Florida Department of Education for staff utilization development is described in terms of the following phases: (1) problem validation; (2) educational system design program criteria; (3) requirements for valid systematic change; and (4) implementation phase.

Gallagher, James J. "A National Institute of Education: Promise and Problems," Educational Research, XXI (September, 1970), pp. 1-4.
The author's point of view is that the proposal for a National Institute of Education is an attempt to establish a new organizational structure that would be more likely to produce research and development that would lead to effective educational reform.

Garabedian, Peter G. "Research and Practice in Planning Correctional Change," Crime and Delinquency, XVII (January, 1971), pp. 41-56.
Correctional research is classified into five categories: (1) research describing the personal characteristics of offenders; (2) records-keeping and information systems; (3) controlled experimentation; (4) organizational research; and (5) research aimed at effecting planned change. The author concludes that all five categories of correctional research have not been successful in changing the underlying structure of correction and have, in fact, had the latent function of perpetuating the existing system. Nevertheless, it is felt that research aimed at effecting planned change offers the best hope of bringing about needed change.

Garvue, Robert J. "Accountability: Comments and Questions," Educational Technology, XI (January, 1971), pp. 34-35.
The author questions whether educational accountability can be implemented to any serious extent until factors of change strategies, citizenry involvement, educational research and evaluation, management support systems, behavioral objectives and others enter into a more sophisticated stage of development.

Gerhardt, Frank. "Strategies for Instructional Leaders," Educational Leadership, XXVI (January, 1969), pp. 359-362.
The author defines strategy as a term that may be applied to a broad general approach designed to suggest specific techniques for expanding three basic areas: (1) involvement, (2) decision-making processes, and (3) political sophistication on the part of professional and lay commitees.

Goodlad, John I. Educational Change: A Strategy for Study and Action. Melbourne, Fla.: Institute for Development of Educational Activities, Inc., 1968.
The author lists a number of potential changes that have not been implemented in schools and proceeds to describe the "League of Cooperating Schools," a consortium which is attempting to overcome this deficiency.

Goodlad, John I. "The League of Cooperating Schools," A Setting for Change - The League of Cooperating Schools. Melbourne, Fla.: Institute for Development of Educational Activities, Inc., 1968.
A description is presented of the "League of Cooperating Schools," which represents a tripartite agreement for educational change among nineteen school districts in Southern California, the University of California at Los Angeles (UCLA), and the Institute for Development of Educational Activities, Inc. (IDEA).

Guba, Egon G. "Diffusion of Innovations," Educational Leadership, XXV (January, 1968), pp. 292-295.
The author defines a strategy for diffusion as some action plan which will result in the innovation involved coming to the attention of those practitioners who ought to know about it. To devise such a strategy, the diffuser must pay attention to at least five sets of factors: (1) diffusion techniques, (2) assumptions concerning the nature of the adopter, (3) assumptions concerning the end state in which one wishes to leave the adopter, (4) assumptions about the nature of the agency or mechanism carrying out the diffusion activity, and (5) assumptions concerning the substance of the invention.

Guba, Egon G. "Evaluation and Change In Education." Paper prepared for the Elk Grove Training and Development Center Spring Evaluation Conference, Arlington Heights, Ill., May, 1968.
The author discusses four general criteria for information: (1) internal validity, (2) external validity, (3) reliability, and (4) objectivity. Six special criteria for evaluative information are also discussed: (1) relevance, (2) significance, (3) scope, (4) credibility, (5) timeliness, and (6) pervasiveness.

Guba, Egon G. "The Place of Educational Research in Educational Change." Paper presented to the Canadian Council for Research in Education, Winnipeg, Manitoba, June, 1967. (ED 028 496)
Since educational research, in the several ways that it is presently structured, is not influencing educational practice optimally, four alternatives are suggested:

1. redesign the existing research structure,
2. develop a new research structure to complement existing structures,

3. build linking mechanisms to relate the research community to the practitioner community,
4. build new training programs.

Hansen, Kenneth H. "Sacred Calves," The School Administrator, (March, 1971), pp. 2 & 11.

The author presents four proposals for preventing a new idea or innovation from becoming a "sacred cow":

1. There are probably no discoverable absolutes in a world as variegated and multifaceted, a society as pluralistic as ours.
2. The thoughtful application of that most nearly ultimate of all tests of any idea, new or old: does it work to the ends most desired?
3. The submission of the idea to the most searching and rigorous comparison with other possible and conflicting views.
4. The relaxed realization that every idea, practice, program, or institution is going to produce some mixed results.

Harman, Willis W. "Contemporary Social Forces and Alternative Futures," Journal of Research and Development in Education, II (Summer, 1969), pp. 67-89.

The function of the Educational Policy Research Centers at the Stanford Research Institute and at the Syracuse University Research Corporation is to illuminate policy decisions relating to educational practice and programs, funding and control, and research support. Their central concern is with the relation of these to those major educational policy choices that may influence which of these possible future states indeed comes into being. The task of policy research is described as being comprised of the following stages:

1. Forecasting alternative futures and identifying key choice points ahead.
2. Identifying key educational policy choices which will help determine the future.
3. Delineating the context of these choices.
4. Identifying alternative policies and evaluating these in terms of links with alternative futures, costs and feasibilities, and movements toward goals.
5. Continuing monitoring of society and study of which alternatives are actually chosen and why.
6. Iteration of the process above.

Harmes, H. M. "Improvement in Education: Criteria for Change," Educational Technology, X (November, 1970), pp. 46-50.

Five categories of educational improvements to identify those programs that offer the greatest hope of improvement and to evaluate progress to determine their actual effectiveness are suggested:

1. A program will be improved when the day-to-day operational objectives are changed so that their contribution to the overall goals of the program is increased.

2. Other things being equal, an instructional or administrative procedure will be improved when a change in procedure results in the accomplishment of its objectives with less expenditure of effort.
3. Other things being equal, an instructional or administrative procedure will be improved when a change of procedure results in the generation of fewer undesirable side effects.
4. Other things being equal, a program will be improved when the reliability of the program is increased in the context of use for which it was intended.
5. If a program can be designed to accomplish objectives that were not obtainable at all with previous programs, then that program is an improvement.

Harmes, H. M. "Specifying Objectives for Performance Contracts," Educational Technology, XI (January, 1971), pp. 52-56.

Four critical elements to achieve the required degree of specificity must be contained in a performance contract:

1. Each performance contract must spell out in detail what is to be accomplished by the contract, either in terms of product or of processes to be implemented.
2. Both the school agency and the contractor must know the specific type of student who is to be transformed by the instructional program.
3. Resources to be committed to the performance financing contract must be carefully spelled out. Resources consist of three things: operating resources, capital resources and time resources.
4. Both the contractor and the school agency should be fully aware of those things that must be done or must not be done, apart from fulfilling the objectives of the contract, in order to meet the intent of the school agency in issuing the contract.

Hayes, Robert B., Floyd N. Keim, and Albert M. Neiman. The Effects of Student Reactions to Teaching Methods. Harrisburg, Pa.: Bureau of Research Administration and Coordination, Department of Public Instruction, September, 1967.

The relationship between improved teaching and increased feedback to teachers of student reactions was investigated. Three types of feedback situations were used: (1) students rated teachers, (2) observers rated teachers, and (3) both students and observers rated teachers. The control group teachers received only students' test results. Teachers were found in general to prefer face-to-face feedback to written feedback. Ninety percent of them thought such feedback was accurate and helpful. The procedure did not result, however, in improved student performance or attitudes toward subjects as a whole. When such improvement did appear, it seems that written feedback was most effective.

Hearn, Norman. "The Adoption Rate of Title III Innovations after the End of Federal Funding," Educational Technology, X (November, 1970), pp. 43-45.

This document reports on a study of 330 operational projects under Title III PACE, Projects to Advance Creativity in Education, funded in 1965-66 with termination dates during 1968-69. Among the most significant findings were:

1. The continuation rate of the projects after federal funds expired was 75 percent.
2. The kind of project most likely to be continued had a higher percentage of local participation, served more people, had a higher budget, and constituted a major change or reorganization in the school.
3. Involvement of students and school board members enhanced the probability of continuation.
4. Younger superintendents, with doctorate degrees and more years of experience as superintendents, had significantly greater adoption rates.
5. Urban projects had a higher continuation rate.

Hearn, Norman E. "Dissemination: After Bangkok, What?" SEC Newsletter, II (January, 1968), pp. 1-4.

The author believes that many people have erroneously criticized the applicability of the agricultural extension model to educational change. The author asserts that the model is more viable than it seems and that educators have failed to implement it properly. He presents fifteen recommendations for improving dissemination in education. The recommendations are in keeping with his support of the agricultural model.

Hencley, Stephen P. "Innovation and School Policy," Educational Leadership, XXV (January, 1968), pp. 308-311.

The author offers four generalizations concerning linkages between school policy and pressures for innovation:

1. Policies of boards of education represent explicit and implied recognitions of legitimized value allocations which are expected to prevail within educational systems.
2. Since policies represent codifications of prevailing preference structures, pressures for innovation and change may be interpreted as demands for reallocation, realignment or redistribution of value outcomes in a system.
3. Demands for change may be met by counter demands from those who are satisfied with system outcomes based on current policies.
4. The adoption of any important innovation or change proposal may be regarded as legitimation of new value outcomes within the system.

Based upon these generalizations, he offers the following suggestions in regard to change initiation within school organizations: (1) go slowly, (2) calculate the cost, (3) communicate the advantages, (4) review the alternatives to power strategies, and (5) understand the change process.

Hobson, Julius W. The Damned Children: A Layman's Guide to Forcing Change in Public Education. Washington, D.C.: Washington Institute for Quality Education, August, 1970.

This publication is designed to provide non-educators, parents, and community groups with tools to evaluate measurable quantitites in the educational process. Quantative, computational data are presented in a series of simple bar charts which purport to show inequities practiced in public education in Washington, D.C. Charts are presented on: (1) the school board, (2) teacher assignment, (3) ability grouping of students, (4) books per pupil, (5) regular budget funds, (6) federal funds, (7) dropouts, and (8) reading levels.

Hoepfner, Ralph (ed.). CSE Elementary School Test Evaluations. Los Angeles: Center for the Study of Evaluation, Graduate School of Education, University of California at Los Angeles, 1970.

This text contains an evaluation of elementary school tests. The following four criteria were used in evaluating the tests: (1) measurement validity, (2) examinee appropriateness, (3) administrative usability, and (4) normed technical excellence.

Holmes, Brian. "Educational Change in Europe," Educational Leadership, XXVII (January, 1970), pp. 343-345.

The author describes the shared aspirations of those who are seeking educational reform in Europe.

Howes, Virgil M. "A Strategy for Research and Change: The League of Cooperating Schools," A Setting for Change - The League of Cooperating Schools. Melbourne, Fla.: Institute for Development of Educational Activities, Inc., 1968.

Initial program thrusts of the "League of Cooperating Schools," a tripartite agreement among nineteen school districts of Southern California, the University of California at Los Angeles, and the Institute for Development of Educational Activities, will focus on three major areas: (1) curriculum, (2) school organization, and (3) instruction.

Johnson, Bert W. "Evaluate the Present and Chart the Future," The American City, LXXXIV (August, 1969), pp. 75-77.

The author emphasizes that change is ever-present and that government officials must constantly evaluate existing programs while planning new ones to meet emerging areas of need.

Johnson, Frank W. "Performance Contracting With Existing Staff," Educational Technology, XI (January, 1971), pp. 59-61.

The author proposes the use of performance contracting with the existing teaching staff utilizing bonuses or performance criteria pay (PCP).

Johnson, Stephen M., and Richard A. Brown. "Producing Behavior Change in Parents of Disturbed Children," Journal of Child Psychology and Psychiarty and Allied Disciplines, X (1969), pp. 107-121.

Out-patient clinic procedures for changing problematic parent-child relationships are described. These procedures are illustrated by the presentation of two cases in which parental behavior change was effected with resulting improvement in the parent-child interaction. Standard interactional situations were developed in each case in which a set of behavioral demands were made on the parent and the child. These demands elicited the problematic child behaviors for which treatment was required. Systematic behavioral observations were taken establishing a quantifiable measure of problematic child behaviors and related parental behaviors. Measures were then taken to modify the nature and frequency of parental behaviors while systematic observations on both parent and child continued. The techniques used in this parental training are described and their uses illustrated in the development of parental behavior change. The results indicate that these procedures can be effective in producing desirable changes in problematic parent-child relationships and that they are worthy of continued exploration.

Keeley, Jean A. "Criteria for Innovation," Educational Leadership, XXV (January, 1968), pp. 304-307.

The author argues that the innovation initiated to improve on the status quo, either in process or product, is the key to the historical development of each area of man's endeavors. The author believes that the major criterion for innovation must be that it seeks to change what existed so that what is created is better for the society which it serves. For innovation to be pragmatic, the following questions must be answered:

1. Is the proposed change directly related to identifiable needs of society?
2. How does the existing system fail to meet those needs?
3. Are these same needs successfully being met by other approaches already in operation in a different location?
4. Has the proposed change been examined in terms of its relationship to pertinent researched data?
5. Can such a shange be adequately evaluated before and/or after it is put into operation?

Ketchum, David S. "Implementing the Plan," *College and University Journal*, IX (Summer, 1970), pp. 23-27.
The author offers suggestions for how chief development officers in organizations should go about implementing basic plans.

Klein, Stephen P. "The Uses and Limitations of Standardized Tests in Meeting the Demands for Accountability," *Evaluation Comment*, II (January, 1971), pp. 1-7.
The demands of accountability are to assess student performance adequately and to provide a fair system of reward to whoever was responsible for that performance. Those using standardized testing to satisfy such demands are up against four limitations: (1) the agreement on goals between test and school may be less than perfect; (2) the test may be poorly designed for those who are taking it; (3) the administration of the test may introduce uncontrolled variables affecting the results; and (4) the tests themselves may be measuring things different from what they appear to be measuring. If this is the case, then the payment system will not be fair, teachers will resist the adoption of the tests, and the tests will not be doing the job they were meant to do for the schools. The author feels that better tests must be developed and better methods found for evaluating test results. He details problems that have been found in using specific standard tests and feels that the needs of accountability are currently being met by *no* standard published tests.

Kowitz, Gerald T. "Six Hard Questions to Answer before You Buy o Bond Another of Those 'Innovations,'" *American School Board Journal*, CLVIII (February, 1971), pp. 32-35.
The author offers six questions which should be answered before a school district decides to adopt an innovation:

1. How should the innovation be evaluated?
2. How does the innovation view the student as a person?
3. What does the innovation assume about the learning process?
4. How does the innovation view the student as a learner?
5. What are the goals of innovation?
6. Is the innovation administratively feasible?

Kunkel, Richard. "The UMSSP - An Innovative Venture," *College of Education Record*, LII (December, 1966), pp. 57-61.
The nature and objectives of the Upper Midwest Small Schools Project are described. The project involves fifteen schools in North Dakota and Montana. The objectives of the project are as follows:

1. To identify potential leaders in rural education.
2. To provide assistance and added materials to develop this leadership role of teachers, and to assist in

developing leadership in this geographic location.

3. To establish a pattern by which other schools in rural areas may be organized to facilitate the incorporation of new educational innovations.

Lessinger, Leon M. "Accountability and Curriculum Reform," Educational Technology, X (May, 1970), pp. 56-57.

The author maintains that educational accountability will enable the quality of education to be measured by student accomplishment rather than resources allocated, and will enable independent review, which would bring education more closely in line with the mainstream of science.

Lessinger, Leon M. "Accountability in Public Education," Proceedings of the 1969 Invitational Conference on Testing Problems. Princeton, N.J.: Educational Testing Service, 1969.

The author believes that community dissatisfaction with the schools can be changed by stressing accountability for what the student learns there. He equates communities' demands on their schools with a demand for "product reliability" and calls for a product evaluation approach to education. He sees performance contracting as an abstract procedure that can be widened to include evaluation of all educational programs.

Lieberman, Ann. "Problems in Making Feedback Useful to School Staff." Paper presented at the Annual Meeting of the American Educational Research Association, New York, February, 1971.

This paper explores the relationship between educational researchers and teachers. The researcher is encouraged to return to the teacher the results of the projects in which they have participated, using language that will be meaningful and helpful to them. The greatest problems were found to be in communicating negative data. The author sketches a method for handling such problems.

Light, Richard J., and Paul V. Smith. "Choosing a Future: Strategies for Designing and Evaluating New Programs," Harvard Educational Review, XL (Winter, 1970), pp. 1-28.

The authors believe that better programs will grow from improved development and evaluation strategies. They advocate that evaluation should be embedded in ongoing program development. Several ideas are presented to this end: (1) most programs have multiple goals which are dynamic over time rather than fixed; (2) the program developer should have "control" over certain aspects of his program; (3) the virtues and limitations of post hoc experimental designs and post hoc sample surveys should be known; (4) various defects of post hoc experimental designs can be corrected; (5) traditional post hoc surveys can be modified and made much more powerful; and (6) two summary tables are presented which synthesize some choices which both evaluators and program developers must make.

Lopez, Felix M. "Accountability in Education," *Phi Delta Kappan*, LII (December, 1970), pp. 231-235.
Accountability is defined as the process of expecting each member of an organization to answer to someone for doing specific things according to specific plans and against certain timetables to accomplish tangible performance results.

Mackenzie, Gordon N. "The Process of Innovation," *NEA Journal*, LVI (May, 1967), pp. 27-31.
Six ingredients are needed for the successful implementation of an innovation: teaching, students, subject matter, methods, materials and facilities, and time.

Martin, Dikran J. *Instructional Research and Development at the College of Marin*. (n. p.), (n. n.), November, 1968. (ED 027 000)
The author details the installation at the College of Marin of an organization to encourage research and development, and experimentation in instructional techniques.

Mayrhofer, Albert V. "Factors to Consider in Preparing Performance Contracts for Instruction," *Educational Technology*, XI (January, 1971), pp. 48-51.
The author advocates the use of the "turnkey" approach to performance contracting, which is defined as the contracting of organizations which can furnish teams of people who have the knowledge, experience and attitudes to assist school districts in an area where it will be possible for the district to extend and expand the service independently of the contractor upon termination of the contract.

McComas, J. D. "Accountability: How Do We Measure Up?" *Educational Technology*, XI (January, 1971), p. 31.
A system of educational accountability should include teacher education, state departments of education, private education-related enterprises, pupils, teachers, administration, supervision, and pupil-personnel services.

McNeil, John D., and Howard J. Sullivan. "How Shall the Curriculum Specialist Greet Research?" *Educational Leadership*, XXV (February, 1968), pp. 469-475.
The authors offer three guidelines for the curriculum specialist in evaluating curricular innovations and in applying research findings to improve educational practice: (1) do not confuse mere innovation with educational improvement, (2) be prepared to accept research findings which upset one's own opinions, and (3) try to utilize research to improve instruction.

Miller, Richard I., and Marcia W. Findley (eds.). PACE: Transition of a Concept. The First Report of the President's National Advisory Council on Supplementary Centers and Services. (n.p.), (n.n.), February, 1969.

This document reports on the past, present and future of, and makes recommendations for, the "Project to Advance Creativity in Education" (PACE).

Moore, R. F. "Five Ways to Bridge the Gap between R&D and Production," Research Management, XIII (September, 1970), pp. 367-374.

Five basic factors can minimize the translation of research and development (R&D) activities into production:

1. Significantly improved communications.
2. Broader use of EDP systems in production operations.
3. The establishment of a group specifically devoted to bridging the translation gap.
4. The expanded use of the product or process manager concept within production areas.
5. The technical upgrading of production personnel specifically at the R&D interface.

Moore, Samuel, and Kiyoto Mizoba. "Innovation Diffusion: A Study in Credibility," Educational Forum, XXXIII (January, 1969), pp. 181-185.

Three major points are made in regard to credibility:

1. Credibility is directly related to the extent to which the change is congruent with the cultural values and perceived needs of the people.
2. The degree to which the source is acceptable to the public is directly related to the adoption of an innovation.
3. Credibility is directly related to the qualities inherent in the innovation: (a) relative advantage, (b) compatibility to the receivers' experiences and values, (c) complexity or simplicity, (d) divisibility, and (e) communicability and visibility of the results.

Three components in devising an effective diffusion strategy are discussed: (1) an acceptable image of the source (e.g., principal of a school) needs to be established; (2) the objectives and functions of the innovation need to be communicable; and (3) the nature of the reciever must be incorporated into the diffusion process.

Morgan, Robert M. "ES'70 - A Systematic Approach to Educational Change." Paper presented at the Annual Meeting of the American Educational Research Association, Los Angeles, February 1969.

The nature, status, and plans of Educational Systems for the Seventies are described.

Myers, Sumner. "How to Sell New Ideas to the Cities," Harvard Business Review, XLVI (July-August, 1968), pp. 111-118.

The author suggests that a way to stimulate demand for innovations in the public sector is to bridge the information gap between vendor and customer. On the one hand, politicians and public administrators do not know what to ask for because they do not understand specifically what benefits technology might produce. On the other hand, engineers and scientists do not know with sufficient intimacy the needs of the cities, and, in absence of active demand, are not motivated to explore them in depth.

The Plan for the Development of the New System of Education in One Community. Hartford, Conn.: The Center for the Environment and Man, (n.d.).

The redesign program of New York State is described It is intended to devleop and implement organizing processes for increasing widespread innovation within a framework of overall goals. It is directed at the following fundamental transformations of basic educational processes: (1) from a system geared for relatively slow evolution to one capable of rapid change; (2) from a system to provide mainly predetermined curricula and programs to one geared to supporting the ongoing development of students; (3) from a system which provides contributions only at early and middle years of a person's life to one geared for sustained contributions appropriate at every stage of a lifetime; (4) from a system geared to provide mainly knowledge, and which treats knowledge as an end in itself, to one geared to helping people learn how to use what they learn and how to work together productively.

Primary Network Innovations. First Annual Report. New York: E. F. Shelly and Co., May, 1968. (ED 032 630)

The document gives summaries of innovations in fourteen school districts in the "Educational Systems for the Seventies" Network.

Proceedings of the Conferences on Educational Accountability. Princeton N. J.: Educational Testing Service, 1971.

This document contains seven papers presented at the Conferences on Educational Accountability held in March of 1971 in Washington, D.C. and Hollywood, California.

"The Means and Ends of Accountability" by T. H. Bell introduces the concept of accountability in education and stresses the fact that influences other than teacher ability come to bear on student performance.

"Issues in Implementation" by N. Estes and D. R. Waldrip describes the history of, and motivation for, accountability in education.

"Issues in Implementation" by R. W. Locke discusses

the relationships and differences between accountability and performance contracting, as well as the problems encountered in using the latter.

"Public Expectations" by W. C. Riles explores the relationship between public opinion and accountability.

"Public Expectations" by H. T. James describes the history of the accountability concept insofar as public opinion is concerned and attempts to forecast the future relationship between the two.

"The Role of Education" by H. S. Dyer discusses the problems involved in fixing accountability in terms of American history and his own personal teaching experiences.

"The Future of Accountability" by J. W. Porter discusses accountability with respect to equal opportunity in education for all students.

Polner, Murray. "Can the Public Schools Be Saved?" Commonwealth, XCIII (October, 1970), pp. 15-17.

The author holds that, if public schools continue to lose esteem, they will, regardless of radical, moderate, or no innovation at all, be abandoned by parents of all races. Alternative schools, which could offer a number of varying educational techniques and approaches without having to please huge and remote bureaucracies or a city of varied veto groups, are viewed as a possible solution to the demise of public schools.

Ramo, Simon. "Comment: The Anticipation of Change," Technology and Culture, X (1969), pp. 514-521.

The author offers the following suggestions to anticipate change:

1. List possibilities of major technological advances and, for each advance or event, the likelihood of its occurrence from "nearly certain" to "highly unlikely," including a time span for the date of the event's occurrence if it occurs.
2. Order the list as to importance of impact, again as to likelihood of occurrence, and finally again as to the period of occurrence.
3. Select those events which have such a combination of importance, likelihood, and timing as to deserve special attention.
4. For these selected events, study and list the "good" and "bad" potential consequences.
5. Analyze and invent how to maximize the good and minimize the bad.
6. Plan a program for implementing the changes so they will occur as desired or, at least, for influencing those changes beneficially.

Reitan, Henry M., and Richard E. Lander. "Educational Innovation in Community Colleges of the Northwest and Alaska." Seattle: Center for Development of Community College Education, Washington University, August, 1968. (ED 028 765)

This report describes the returns from an inventory on educational innovation circulated among forty-nine community colleges in the states of Alaska, Idaho, Montana, Oregon, Utah, Washington and Wyoming. Forty-five community colleges responded, giving data on the use of ninety-two technological, ideational, or organizational innovations and the extent of their use.

Reynolds, Harris W., Sydney M. Grobman, and Ivan C. McGee. "Evaluative Criteria for Vocational Technical Programs." Harrisburg: Bureau of Curriculum Development and Evaluation, Department of Public Instruction, Commonwealth of Pennsylvania, 1967.

This document presents a philosophy, several procedures, and a number of sample forms for use in the evaluation of vocational technical programs.

Rogers, Carl R. "A Plan For Self-Directed Change in an Educational System," Educational Leadership, XXIV (May, 1967), pp. 717-731.

The intensive group experience is described as a tool for change which can be applied to a whole system over a short period of time.

Shulman, Lee S., et al. "Reconstruction of Educational Research," Review of Educational Research, XL (June, 1970), pp. 371-396.

The authors argue that educational research has essentially been a failure thus far, but that neither a continuation of present practices nor a total rejection of them will solve the problem. It is felt that researchers must step back, regain perspective and then identify clearly the most fruitful routes toward development of an empirically-based discipline of education.

Smith, Louis M. "Dilemmas in Educational Innovation: A Problem for Anthropology as Clinical Method." Paper presented at the Annual Meeting of the American Educational Research Association, New York, February, 1971.

The author describes some participant observation techniques as an anthropological method for making direct qualitative observations. Case study research is advocated as a clinical method for use in any area, such as education, which, according to the author, is just beginning to develop its own research methodology. A detailed study of space-school architecture is presented to illustrate the case study ideas. The report indicated that the case study approach aids in description, conceptualization and interpretation.

Stafford, Samuel. "The Brookings Institution -- A Middle-Aged 'Think Tank' With Young Ideas," Government Executive, I (September, 1969), pp. 61-64.

The programs of the Brookings Institution are described. The Institution is exploring broadened applications of computer technology to economic and social studies.

Taylor, James G. "Introducing Social Innovation," Journal of Applied Behavioral Science, VI (January, February, March, 1970), pp. 69-77.

After describing a successful change project, the author emphasizes the following principles of social innovation: (1) the principle of maximum investment, (2) the principle of co-optation, (3) the principle of egalitarian responsibility, (4) the principle of research as creative play, and (5) the principle of the research leader as spokesman and ideologist.

Twelker, Paul A. "Designing Simulation Systems," Educational Technology, IX (October, 1969), pp. 64-70.

Three phases and thirteen steps in designing instructional simulation systems are discussed. The phases and steps are as follows: I. Determining what to teach - (1) define instructional problem, (2) describe the operational educational system, (3) relate the operational system to the problem, (4) specify objectives in behavioral terms, and (5) generate criterion measures; II. Determining how best it might be taught - (6) determine appropriateness of simulation, (7) determine type of simulation required, and (8) develop specifications for simulation experience; and III. Validating the system - (9) develop simulation system prototype, (10) tryout simulation system prototype, (11) modify the simulation system prototype, (12) conduct field trial, and (13) make further modifications to the system deemed appropriate from field trial evidence.

Tye, Kenneth A. "Monitoring the Systems: Points of Entry." Santa Ana, Calif.: Orange County Schools Office Supplementary Educational Center, January, 1969.

Eleven principles of change which can lead to the formulation of actual strategies are discussed:

1. Self-improvement is an important step in helping others to change.
2. Change is a cooperative venture, involving the identification and examination of individually-held values within the group.
3. Decision-making processes within an organization should be clearly understood by all members as they work towards change.
4. Role conflict should be understood and eliminated or accomodated whenever possible.

5. Whenever possible, change should be induced in situations which involve problem-solving.
6. A climate of freedom should exist within an organization which is trying to change.
7. Channels of communication within an organization which is trying to change should be kept open.
8. Power and influence should be used with care within an organization which desires to change.
9. People's resistance to change is a matter of individual differences and should be treated as such.
10. In bringing about change in an organization, one adds forces in the direction of the improvement or one diminishes opposing forces.
11. Change should probably occur on a limited number of fronts at any given time.

Tye, Kenneth A. "Unfreezing the System: Equilibrium and Organizational Health." Santa Ana, Calif.: Orange County Schools Office Supplementary Educational Center, November, 1968.

It is emphasized that in planning change, an organization must consider the following five dimensions: (1) the culture in which it resides, (2) the politico-economic environment in which it resides, (3) the institutional expectations it holds for its members, (4) the personality needs of the people it employs, and (5) the group norms which build up within the organization.

Underwood, Kenneth E. "Before You Decide to Be 'Accountable,' Make Sure You Know For What," The American School Board Journal, CLVIII (September, 1970), pp. 32-33.

The author argues that accountability refers to a firmly established system of measurement upon which innovation must be based.

Usdan, Michael D. "Strengthening Citizen Participation: An Analysis of New York City Experiments." Paper presented at the Annual Meeting of the American Educational Research Association, Los Angeles, February, 1969.

The author suggests that educational changes of any magnitude will have to be implemented on an all-or-nothing basis in large cities if they are to succeed against the entrenched and influential establishment.

Walton, Richard E. "Two Strategies of Social Change and Their Dilemmas," Journal of Applied Behavioral Science, I (April-May-June, 1965), pp. 167-179.

The author discusses two different types of strategy for achieving desired change, power strategy and attitude strategy.

Way, Russell S. "Basic Factors of Educational Change," Wisconsin Journal of Education, XCIX (April, 1967), pp. 13-14.
The following factors for change are discussed: (1) climate, (2) structure, (3) goals, (4) evaluation, and (5) money.

Wolfe, Alan. "The Experimental College - Noble Contradiction," Change, II (March-April, 1970), pp. 26-32.
The author argues that people should opt for social change as a first priority. He believes that some people are committed to educational change without social change as a first priority. He also believes teachers and students are often attracted to experimental educational programs not as the result of the qualities inherent in the program but of disillusion and frustration caused by traditional programs.

Worthen, Blaine R. "The Innovation Dilemma," SEC Newsletter, I (December, 1966), pp. 1-4.
The author points out that school personnel generally tend to react homeostatically to external and internal pressures in the following ways: (1) resistance, (2) rationalization, (3) random adoption of innovations, and (4) innovations by fiat. He believes that staff involvement, evaluation of innovations, and provision for continued innovation are three essential points which must be incorporated within any strategy for planned educational innovation. He discusses the importance of four types of evaluation: (1) context, (2) input, (3) process, and (4) product.

Wynne, Edward. "School Output Measures As Tools For Change," Education and Urban Society, II (1969), pp. 3-21.
The author emphasizes that school output measures will play a growing role in fostering constructive innovation in urban schools. He urges promoters of change to be sensitive to the interplay of technical issues, public relations and institutional resistance.

IV. ROLES IN CHANGE

Abbott, Max G., and Terry L. Eidell. "Administrative Implications of Curriculum Reform," Educational Technology, X (May, 1970), pp. 62-64.
The authors explain that educational organizations have, on the whole, so far effectively resisted the adoption and institutionalization of radically new instructional materials, processes or arrangements. They assert that schools have effectively resisted the adoption of relatively reactive primary innovations. Four major changes in the

nature of administration are seen as necessary to correct the situation: (1) administrators will be forced to develop a capacity for understanding the organization as a total functioning system; (2) administration will become more and more a supportive function in contrast to a controlling function; (3) administrators will need to develop the skills and provide the tools for more adequate and sophisticated use of information in educational planning; and (4) administrators will have to emphasize coordination because of the introduction of new personnel specializations in schools, with a concomitant increase in the division of labor.

Action Guide: How to Handle a Personnel Crisis. Dynamic Management Series #119. Waterford, Conn.: Bureau of Business Practice, Inc., 1969.
Various guidelines are offered for how administrators can deal with personnel crises.

Adams, Velma A., and James E. Doherty. "A New Kind of Superintendent," School Management, XIV (February, 1970), pp. 28-35.
The authors report on the results of a survey questionnaire which was mailed to 780 superintendents. The questionnaire was designed to find out: (1) what proportion of superintendents surveyed defined their roles in active, rather than passive, terms; and (2) how this distinction between active and passive roles shows up in actual operating terms.

Alderfer, Clayton P. "Organizational Diagnosis from Initial Client Reactions to a Researcher," Human Organization, XXVII (Fall, 1968), pp. 260-265.
The theoretical framework utilized in this report stems primarily from clinical psychology and psychiatry. The author states that there are some marked parallels between the doctor-patient setting and the researcher-client encounter: (1) the high degree of ambiguity in the meeting; (2) the search for self-knowledge and understanding with the mixed feelings of the desire to know and the fear of finding out which this entails; and (3) both parties are attempting to assess the trustworthiness of the information provided by their opposite number.

Anderson, Barry D. "Socio-Economic Status of Students and School Bureaucratization." Paper presented at the Annual Meeting of the American Educational Research Association, New York, February, 1971.
The author suggests that school administrators, especially in schools in lower socio-economic areas, should attempt to minimize the number of behavioral constraints placed on students and to develop in students a sense of control over their destinies.

Angle, Philip H. "Challenge for Change," Pennsylvania School Journal, CXVII (September, 1968), pp. 29-30.
The author's view is that educators must take the initiative in change, or someone outside of education (e.g., industry) will take this initiative. Teachers should be as willing to accept new ideas, new techniques, and new materials as are physicians.

Annese, Louis E. "The Principal as a Change Agent," The Clearing House, XLV (January, 1971), pp. 273-277.
The author hypothesizes that theory-oriented perceptions of change-agent leadership encourage change-agent leadership behaviors and that change-agent leadership behaviors encourage democratic interpersonal behaviors.

Anrig, Gregory R. "Those High School Protestors: Can Boards Put Up With Much More?" American School Board Journal, CLVII (October, 1969), pp. 20-22, 24.
The author urges school board members and administrators to think more in terms of educational change than in terms of repression and control when considering student unrest.

Aquino, Charles C. "Change in Education — An Unanswered Challenge," Educational Technology, IX (December, 1969), pp. 74-76.
It is felt that administrators speak for change, faculties insist upon change, and students demand change. However, these agents, when given the opportunity to effect change, generally accomplish little aside from introducing some innovation which usually is applied to the educational process in a traditional fashion. The author states that teachers should reject their roles as purveyors of information and become specialists whose principal task is to supervise learning.

"Are you Ready for Change," Instructor, LXXX (August -September, 1970), pp. 83-84.
This article describes an inventory that can be used by teachers for assessing their willingness and interest in change.

Bair, Medill. "Developing Accountability in Urban Schools: A Call for State Leadership," Educational Technology, XI (January, 1971), pp. 38-40.
The author predicts that state departments of education will, by the end of the 1970's, be the most powerful element in the control of education. He suggests that people in education should refuse to develop and promote new educational programs and techniques, refuse to commit public funds, and refuse to employ personnel until clear goals are established, ways to measure accomplishment of these goals are developed, and logical techniques to employ in reaching them are set up.

Baker, Marie S. "Innovation and the Beginning Teacher," Pennsylvania School Journal, CIX (November, 1970), pp. 157-159.

After reviewing some literature on educational change, the author concludes that if beginning teachers really want to break the bonds of tradition, they must first examine themselves as teachers and then consider others who will be affected by their moves.

Berger, Irving L. "Resistances to the Learning Process in Group Dynamics Programs," American Journal of Psychiatry, CXXVI (December, 1969), pp. 850-857.

It is stressed that the leader distinguish between blocks in learning related to problems of initial dependency and anxieties about status and role, and those related specifically to learning.

Bettinghaus, Erwin P., and John R. Baseheart. "Some Specific Factors Affecting Attitude Change," The Journal of Communication, XIX (September, 1969), pp. 227-238.

The authors' hypothesis was that when subjects were not required to commit themselves publicly to an issue, they would change their attitudes toward the topic significantly more than would subjects required to publicly commit themselves. It was hypothesized that this effect would be significantly more pronounced for subjects receiving a one-sided message arguing in favor of the topic than it would for subjects receiving either a one-sided message arguing against the topic or a two-sided, pro or con message. The data reported by the authors confirmed the hypothesis.

Betz, Robert. "The Project Consultant: His Unique Role." Paper presented at the American Personnel and Guidance Association Convention, Las Vegas, Nev., March 30 - April 3, 1969. (ED 033 404)

The author maintains that the consultant's role should be one of creating need and demonstrating that educational progress can be made by systematic and well-managed approaches. The extent to which the project consultant is able to establish the same basic helping relationship with project staff members as he desires the staff to have with the clientele will determine the degree of success of the project. Today the consultant is more of an expert on the process of change, of modifying attitudes and assisting in effective behavioral changes, than an expert on content.

Bressler, Marvin. Defining Profitable Areas for Research in the Sociology of Education. Final Report. Princeton, N. J.: Princeton University, 1968. (ED 023 645)

At a conference to define profitable areas of inquiry in the sociology of education, the following needed areas of clarification or innovation were identified and discussed: (1) methodology, (2) theory formation, (3) the relationship between education and other social institutions, (4) the structure of the educational system, (5) education as a profession, (6) the ideology of educational practitioners, and (7) the special problem of educational opportunity.

Bridges, Edwin M. "Administrative Man: Origin or Pawn in Decision Making?" Educational Administration Quarterly, VI (Winter, 1970), pp. 7-25.

The author believes that the dominant focus of empirical and theoretical work has been on administrative man as an origin for his own decisions and an origin for the behavior of subordinates. He also believes that there has been infrequent mention of the intent of subordinates as a cause for the decisions of administrative man and that there are few systematic attempts to understand the decisions made by administrators as products of a pawn guided, shaped and controlled by certain external agents, namely subordinates. He attempts an analysis of the pawn-like side of administrative man under the following headings: (1) administrative man--pawn by choice, (2) administrative man--pawn against his will, and (3) administrative man--pawn without his knowledge.

Brody, Eugene B. "Migration and Adaptation—The Nature of the Problem," American Behavioral Scientist, XIII (September-October, 1969), pp. 5-13.

Adaptation in the psychological sense refers to the process of establishing and maintaining a relatively stable, reciprocal relationship with the environment. For human beings this means the human, social, or interpersonal environment. The adaptation of the migrant, his way of establishing and maintaining a stable, reciprocal relationship with his new environment, is viewed in terms of intrapsychic and interpersonal elements.

Brown, Charles E. "The Foundation's Interest in the Education of Public Administrators." Address given at the Annual Meeting of the Council of Chief State School Officers of the United States, San Juan, P. R., November, 1967.

The author questions whether schools are a mere reflection of the society that created them or whether they should play the role of constructive critics and seek to improve society through education. The author's position is that schools have not really played such a dual role, but rather have been satisfied with a relatively passive position in relation to society and have seldom fulfilled their role as agents of change.

Burchinal, Lee G. "OID Will Encourage Schools to Use Tested Improvements," Nation's Schools, LXXXV (May, 1970), pp. 64-65.
The author discusses the major aims of the United States Office of Education's new Office of Information Dissemination (OID).

Butts, David P., and Chester E. Raun. "A Study of Teacher Change," Science Education, LIII (February, 1969), pp. 3-8.
The research reported in this article dealt with the following question: "With what type of teacher can a teacher education program be expected to produce the greatest change in both perception of the innovation and the practice of the innovation?" The study found that since the teacher's competence in science is a key objective of the teacher education program, and since it appears to be related to both the change in the teacher's perception and her practice of the curriculum innovation, to this extent the teacher education program appears to be successful.

Chase, Francis S. "The R & D Institutional Base: What More is Needed?" Journal of Research and Development in Education, II (Summer, 1969), pp. 19-28.
The author argues for expanded funding of the Office of Education's Research and Development Center and Regional Educational Laboratory Programs.

Christie, Samuel G., and Jay D. Scribner. "A Social System Analysis of Innovation in Sixteen School Districts." Paper presented at the Annual Meeting of the American Educational Research Association, Los Angeles, February, 1969. (ED 029 369)
A study was undertaken to determine what combination of variables seems to facilitate the adoption of educational innovations. Under the assumption that the school-community should be viewed as a social system, data were gathered from sixty-five board members, sixteen superintendents, sixteen principals, and 358 teachers in sixteen southern California school districts. The results of the study indicated that the innovative teacher: (1) seeks information from many sources for new ideas about teaching; (2) relies on outside sources for information more than local ones; (3) has an accurate perception of himself as an innovator; (4) is either a cosmopolitan or an opinion leader; (5) is recognized by fellow teachers as a person who is knowledgable about teaching; (6) is looked to by fellow teachers for new ideas; (7) does not usually borrow ideas from teachers in his building or district; and (8) tends to utilize students in obtaining feedback. The study offered tentative support for the idea that the characteristics of superintendents are weakly related to innovation, and that it is the behavior of superintendents that needs to be studied. Further evidence indicated the importance of superintendent vs. board interaction. School board members

in less innovative districts perceived their districts to be above average in innovation. However, more frequent conversations with the superintendent are associated with a correct perception of innovation by board members. Finally, in this study there was no correlation between the rate of adoption of innovations at the district level and the rate of adoption of innovations by teachers.

Cnudde, Charles F. "Elite-Mass Relationships and Democratic Rules of the Game," American Behavioral Scientist, XIII (November-December, 1969), pp. 189-200.

This article attempts to develop a set of alternative hypotheses between values and practices which have theoretical support, some of which include the possibility of linkage between citizen values and governmental practices. In examining the literature for theoretical support, the author points out that the influences which argue against linkage have been made prematurely.

Cook, Desmond L., and Sandra B. Damico. "Role Perceptions of Educational Administrators and Researchers Relative to Implementation of Research Findings." Paper prepared for the Annual Meeting of the American Educational Research Association, Los Angeles, February, 1969. (ED 077 610)

The authors attempt to define the role that administrator-researcher relations play in the implementation of innovations. They show that these relations are not responsible for the slowness in implementation inasmuchas both administrators and researchers feel that they are mutually responsible for implementation.

Coombs, Philip H. "Education's Greatest Need: A Vice President in Charge of Heresy," Phi Delta Kappan, XLI (March, 1960), pp. 243-247.

The author argues for the creation of a role which is specifically charged with the responsibility for developing and/or promoting new practices.

Cronbach, Lee J. "The Role of the University in Improving Education," Phi Delta Kappan, XLVII (June, 1966), pp. 539-545.

The author criticizes the new governmental emphasis on development and dissemination without the necessity for prior research. He fears that the new emphasis will result in a neglect of the university's basic function of inquiry and a growth of educational faddism.

Cross, Ray. "A Description of Decision Making Patterns of School Principals." Paper presented at the Annual Meeting of the American Educational Research Assocation, New York, February, 1971.

Among the objectives of this research effort were: (1) to provide quantitative descriptions of the sources of principals' problems; (2) to provide quantitative descriptions of principals' initial reactions to problem stimuli; and (3) to provide descriptions of premises employed by principals in making their initial responses to problems. It was found that the pattern of problem origins and initial principal responses suggested that the principals in this study operated almost entirely within the social system of the local attendance area, at least with respect to decisions which the subjects regarded as critical. The decision-making patterns of the principals studied are characterized as reactive, probably influenced strongly by subordinates, and rapid.

Culbertson, Jack. "Educational Leadership During the 1970's." Paper presented at the Annual Meeting of the American Educational Research Association, Minneapolis, March, 1970.

The author discusses the following trends or characteristics of the seventies: (1) the setting and dynamics of the "politics of education" will continue to expand and to remain intense; (2) conflict will be a constant companion of educational administrators; (3) conditions for decisions concerning educational means and ends will be marked by ambiguity; and (4) school systems will continue to be subject to organizational stress and pressures for change. The author hypothesizes that there will be a relatively greater number of charismatic leaders in the seventies and that this leadership will be typically oriented toward reform and innovation.

Cunningham, Luvern L. "Educational Reform and the Principal," Bulletin of the National Association of Secondary School Principals, LIV (November, 1970), pp. 1-23.

The author maintains that principals must participate in the debate and conceptualization of large-scale reforms, and discusses the following policy domains in which such large-scale reform might take place: (1) compulsory education, (2) the voucher system, (3) community control, (4) credentialing and tenure, and (5) community experience.

Danielson, Robert W. "The English Department Chairman and the Process of Educational Change." Paper presented at the Conference on College Composition and Communication, Louisville, Ky., April, 1967. (ED 026 405)

It is the author's view that the English department chairman should stimulate change by making research publications available and encouraging discussion of them and by belonging to a regional organization that exerts influence over educational change.

D'Arrigo, Peter. "Decision Making for Staff Leadership," New York State Secondary Education, VII (1969), pp. 8-9.

The research reported by the author found that effective principals more frequently referred problems and followed the lead or suggestion of others in the treatment of problems. Less effective principals, on the other hand, made significantly more immediate decisions themselves when confronted with problems.

D'Ascoli, Louis N. "Today's Challenges - Tomorrow's Principal," New York State Secondary Education, VII (1969), pp. 10-11.

The author feels that the advent of the teacher as an integral part of the decision-making hierarchy in the schools and the extensive use of curriculum specialists at every level have combined to edge the principal away from those activities that have been his major areas of concern. Moreover, the trends of education on the horizon point to changing concepts that will provide the principal with a different role in a more complex and challenging environment.

Dauw, Dean C. "Bridging the Creativity-Innovation Gap," The Journal of Creative Behavior, III (Spring, 1969), pp. 84-89.

The author maintains that a creativity-innovation gap is a result of divergence in research trends. One trend leads investigators to attempt the formulation of a theory of innovative behavior in organizations; another trend leads investigators into an analysis of individual creativity. The identification of really successful, innovating change agents is suggested to help bridge the creativity-innovation gap. After identification, they should be studied as an experimental group---possibly using as a control group managers and executives with identical backgrounds.

Delong, R. B. "Timing is Important when Advocating Change," Journal of Environmental Health, XXXII (November-December, 1969), pp. 301-303.

The author advises change advocates to use the evolutionary process to accomplish their goals, but not to get too far ahead of public opinion.

Dodson, Dan W. "Student Power as a Means to Educational Change," Integrated Education, VII (November-December, 1970), pp. 32-38.
The author believes that students don't have the opportunity of redistribution of power through the political process and therefore have selected disruption as an alternative. He states that the whole institutional arrangement of education has to be restructured through disruption of some sort or another.

Doyle, Wayne J. "The Effects of Leader Achieved Status on Hierarchically Differentiated Group Performance." Paper presented at the Annual Meeting of the American Educational Research Association, Minneapolis, March, 1970.
A study was conducted which attempted to determine the effects that the achieved status of the principal (power figure) had on the productivity of a hierarchically differentiated group when all of the group members had an equal share in making decisions. A hierarchically differentiated group is defined as a group that is structured with participants who have unequal ascribed status relationships. The study tested the following two hypotheses:

1. As leader achieved status increases, analytical productivity of the group decreases.
2. As leader achieved status increases, synthesis productivity increases for those groups which have completed the analysis phase.

Both hypotheses were confirmed in this study.

Dufty, N. F. "Innovation and Communication with the Environment: A Case Study," The Journal of Educational Administration, VII (October, 1969), pp. 145-159.
The author examines the role of the communication process in the initiation of new programs in a technical institute.

Eberle, Robert F. "Personnel Management for Change and Innovation in Education," Journal of Creative Behavior, III (Fall, 1969), pp. 277-283.
Adaptation, transportation, magnification, minification, substitution, reversal, modification, and combination are seen as different forms of the change process. It is felt that the administrator and his chief subordinates are clearly the determiners of what, when, and how fast change will take place in a given organization. As the chief agents of change, they must be healthy, secure, enthusiastic, open, and ready for experimentation and innovation to take place. The task of administrators is to clearly express their expectations. It is felt that when this occurs, the individual members of the organization will identify with the pattern that has been set and are more likely to take cognizance and follow their leaders. How the administrator functions in relation to personnel and knowledge will determine the kinds and degree of change and innovation that will transpire in his school.

Eberlein, E. Larry. "The Relationship Between School Climate and Edwards' Manifest Needs of the Elementary School Teacher," Psychology in the Schools, VI (1969), pp. 80-83.

It was found that, contrary to Halpin's predictions, the greatest need for Achievement was manifested among teachers in the closed schools. Furthermore, it was found that higher needs for Deference, Abasement, and Conformity were manifested in the more open schools, with teachers from closed schools reporting substantially less manifest need for Abasement.

Eckstein, Jerome. "Is It Possible For The Schools To Be Neutral?" Educational Theory, XIX (Fall, 1969), pp. 337-346.

The author discusses the issue of schools for social change versus schools for social maintenance.

Edelfelt, Roy A. "The Differentiated Staff Concept: Where Does It Fit into the Professional Picture?" Kentucky School Journal, XLVIII (January, 1970), pp. 15-23.

The author suggests that teaching be differentiated into various roles and responsibilities to allow for the different interests, abilities, and ambitions of teachers.

Edelman, Murray. "Escalation and Ritualization of Political Conflict," American Behavioral Scientist, XIII (November-December, 1969), pp. 231-246.

The view in this article is that human beings form and change their self-systems, their values, and their cognitions as a function of viewing contemplated action from the perspective of other persons and, in the process, create potent symbols for themselves and others. This uniquely human ability to symbolize, the source of man's power to plan and achieve complex ends and also of his remarkable capacity for illusion, is seen as the central focus of research that aspires to explain mass change in political and social expectations, fears, aspirations, and behavior. For example, symbolic or ritualized conflict is seen as enabling specific groups in conflict over instrumental rewards to use their respective bargaining resources free from interference by mass public who may be affected.

Egerton, John. "The Acid Test of the Regional Laboratories," Southern Education Report, IV (January-February, 1969), pp. 12-17.

The author argues that there is a need to define the concept of educational development more precisely, to clarify its relationship to the research function, and to increase the ranks of people proficient in the practice of development.

Ennis, Robert. "The Possiblity of Neutrality," Educational Theory, XIX (Fall, 1969), pp. 347-356.

The author debates the schools for social change vs. schools for social maintenance argument.

Estes, Charles R. "A Delineation of the Curriculum Theorist and Two Exemplars of Philosophical Curricular Theorizing," Journal of Thought, V (January, 1970), pp. 35-45.

The author attempts: (1) to delineate a type of curriculum worker and theorist who concerns himself mainly with the development of a rational framework for systematically interpreting all matters that are important in the field of curriculum; and (2) to provide a precedent for theorizing within the field of curriculum from a philosophical point of view.

Farr, Richard S. "Knowledge Linkers and the Flow of Educational Information." Stanford, Calif.: ERIC Clearinghouse on Educational Media and Technology, Stanford University, September, 1969.

A knowledge linker is viewed as an intermediary between a source of knowledge and the application of knowledge. In order to overcome problems of the knowledge linker such as overload (the great work demand upon the linker in each of his functions), marginality (lack of identity with either the source of knowledge or the client community), and lack of recognized precedence (the recent and incomplete legitimization of information storage, retrieval, and exchange as a science and academic pursuit), the author proposes permanent linking institutions. An institution could offer the individual knowledge linker security and identity and could permit the coordination of the multiple functions of a link in the flow of knowledge chain. An ideally functioning linking institution ought to: (1) anticipate or sense an area of concern among members of its target audience; (2) turn to the resource system and gather all the available information on that subject; (3) select only the most salient elements, summarizing and drawing conclusions; (4) present this exhaustive review of the literature in an easily readable and digestible form, and (5) disseminate the document effectively, reaching the most influential members of the audience which is in need of the information.

Farris, George F., and Francis G. Lim. "Effects of Performance on Leadership, Cohesiveness, Influence, Satisfaction, and Subsequent Performance," Journal of Applied Psychology, LIII (December, 1969), pp. 490-497.

The findings of this study show that past performance affects most aspects of leader behavior, especially his support, interaction facilitation, and goal emphasis. Moreover, high past performance and the resulting leader behavior are associated with greater subordinate influence in decision making, greater group cohesiveness, and higher satisfaction. No clear relationships were found between past performance, associated leader behavior, and estimates of subsequent changes in group performance.

Fascione, Daniel R., and Jack Schwartz. "Survey Research in Public Education: A Cheaper and Better Process." Paper presented at the Annual Meeting of the American Educational Research Association, Minneapolis, March, 1970.

The authors indicate that educational administrators should know what groups will agree on what issues, and describe why and how survey research can provide such information.

Fathi, Asgar. "Marginality, Leadership and Directed Change," Human Organization, XXVII (Summer, 1968), pp. 143-146.

After distinguishing between socially visible and socially invisible marginality, the author puts forth three hypotheses:

1. Other things being equal, adaption or endorsement of an innovation by individuals with visible marks of marginality tends to discredit the innovation in the eyes of the rest of society.
2. Adoption or endorsement by the socially invisible marginals would not discredit the innovation.
3. Adoption or endorsement by the socially invisible marginals facilitates the acceptance of an innovation when the adopter has a certain amount of prestige or legitimizing authority according to longstanding social institutions within the community.

The author suggests that the traditional leader can be an agent of change if he is of the socially invisible marginal type.

Feitler, Fred C., and John V. Long. "An Analysis of Relationships Between Perceived Leader Behavior of Elementary School Principals and Organizational Processes of Schools." Paper presented at the Annual Meeting of the American Educational Research Association, New York, February, 1971.

A study sought to determine (A) if organizational processes of school organizations are related to the leader behavior, and (B) the strength of the relationship between specific organizational dimensions and particular leader behaviors. The results showed that not only are leader behaviors related to organizational processes of schools, but specific leader behaviors are related to processes which are interpersonal in nature.

Ferguson, Donald G. "Student Involvement." A working paper for discussion at the Annual Convention of the American Association of School Administrators, Atlantic City, N.J., February, 1971.

Getting students involved in the solutions to educational problems, the author claims, is a fruitful way to cut costs and increase both motivation and effectiveness. Three categories of student involvement are discussed. First, "Improving the Student Climate Through Increased Attention to Student Development." Reference is made to the creation of a unit within the school district organization that has student development and student life as its primary concern. It is also suggested that a Student Center be included in the physical plant of each school Second, "Including Students in the Decision-Making Process." The author discusses the addition of students to school boards, faculty selection and policy formation committees. Finally, "Incorporating Students as Producers of Educational Programs and Services." The author assumes that a manpower shortage has existed, that more people delivering services to a given population can accomplish more and that students benefit more as they are educationally involved. Students can provide guidance, tutoring and orientation as well as help develop handbooks, tapes and catalogues.

Fielder, Marie. "A Diversified Team Approach to Conflict Intervention," Educational Leadership, XXVII (October, 1969), pp. 15-18.
The author denies the notion that the "good" school is one where there is no conflict. She feels that a diversified team, composed of teachers, principals and students, concerned with solutions, and directing its energy toward practical intervention and action, can reveal the nature of conflicts and the potential they offer for constructive action. The team's focus should be on the courses of conflict as they experience it and on helping each member of the team and his group to develop strategies of intervention. She believes that school administrators should compare conflicts and the progress made toward their resolution as marks of a school's excellence, along with the expenditure per pupil, teacher-pupil ratio, and test scores. In essence, her point is that schools will be changed by conflict or by attempts to prevent conflict.

Flanagan, John C. "Administrative Behavior in Implementing Educational Innovations." Paper presented at the Annual Meeting of the American Educational Research Association, Chicago, February, 1968. (ED 023 182)
Administrative behaviors in implementing educational innovations are discussed under five main headings:

1. In selecting educational innovations, it is proposed that the administrator collect all facts relevant to his situation which relate to the inputs and outputs of his educational system. On the basis of these facts, an administrator can select an educational innovation which promises the most substantial improvements in areas of greatest need for students.
2. In installing educational innovations, the emphasis should be on advance planning and the active participation of all of those who will be involved in such a program, including staff, parents, and students as well as the administrative group.

3. In evaluating educational innovations, advance planning is again a key factor. Other points emphasized are the importance of a comprehensive rather than a partial evaluation and an evaluation focused on student learning and student behavior including long-range follow-up aspects.
4. In extending educational innovations, the key factors are again systematic planning, scheduled decision-making at key points and special emphasis on the implications of the extension of the educational innovation.
5. In improving educational innovations, the principal point stressed was the desire for evaluating defined classes of instructional methods and materials so that broad knowledge about why one instructional program is better than another will be obtained. Such a program makes continuous improvement possible.

Flynn, John M. "The Changing Role of the Teacher," Educational Technology, X (February, 1970), pp. 3-6.

The author bemoans the fact that little attention is usually given to how an innovation or other change affects the teacher and the teacher's role.

Flynn, John M., and Clifton B. Chadwick. "A Study of Teacher Role Behaviors in an Innovative School," Educational Technology, X (February, 1970), pp. 49-55.

The authors believe that the exact direction in which the role of the teacher has changed and is changing is not always well specified by the changes in other aspects of the educational system, nor is it always directly related to other changes.

Goldberg, Irwin. "Professionalism in Teaching: The Organizational Context, Bureaucracy, and the Desegregation of the Schools," Midwest Education Review, II (Fall, 1969), pp. 45-51.

The author believes that professionalism in education has been sacrificed to the interests of bureaucratic management.

Goldhammer, Keith, and Gerald L. Becker, "What Makes a Good Elementary School Principal?" American Education, VI (April, 1970), pp. 11-13.

The authors offer five basic causes for the crisis in elementary education:

1. There appears to be considerable public apathy toward elementary education.
2. There are obvious deficiencies in the preparation programs for elementary school principals.
3. There appears to be an avoidance of a theory of administrative roles, a theory that could serve as an adequate guide for the behavior of elementary principals.
4. Elementary schools are adversely affected by what appears to be a domination in education today by the "higher education" syndrome.

Goldman, Harvey. "Differential Need Patterns: Implications for Principals," The School Review, LXXVII (September-December, 1969), pp. 266-275.
The existing differential in need patterns of elementary and secondary teachers leads the author to conclude that principals assigned to the two levels might have to utilize markedly different approaches when attempting to fulfill a leadership role.

Goldman, Harvey. "New Roles for Principals," The Clearing House, XLV (November, 1970), pp. 135-139.
This article focuses on an altered role for principals consisting of four task areas: (1) interpreting the educational program to the community affected by those offerings; (2) interpreting the community to the teachers and administrators within the system; (3) mediation of local conflict at the local level; and (4) facilitator. In order to allow for this new role, professional relationships must be altered such that cooperative endeavors between principals and teachers could become a reality.

Gouldner, Alvin W. "Explorations in Applied Social Science-Engineering and Clinical Approaches to Consulting," Social Problems, III (January, 1956), pp. 173-181.
The author believes that the engineer's willingness to accept the client's definition of the problem and the clinician's insistence on doing his own diagnostic work to separate problem from sympton is a major distinction between engineer and clinician roles in consulting.

Grobman, Hilda. "Change Processes in Biology Education," American Biology Teacher, XXX (December, 1968), pp. 809-811.
This article points out that schools adopting new biology programs are by no means uniformly "good" schools. The author found that schools in which new programs are adopted all have someone who took on the role of "change agent." In other words, the major factor in adding new biology programs was the amenability of the system to change plus an active change agent.

Gruenfeld, Leopold W., David E. Rance, and Peter Weissenberg. "The Behavior of Task-Oriented (Low LPC) and Socially Oriented (High LPC) Leaders Under Several Conditions of Social Support," The Journal of Social Psychology, LXXIX (1969), pp. 99-107.
The authors investigate two major clusters of leadership behavior which have been variously described as (1) task-oriented vs. socioemotionally-oriented; (2) production vs. people oriented; and (3) initiation structure vs. consideration. They attempt to sample the actual behavior of leaders, rather than self-descriptions of leader behavior.

Hamilton, Norman K. "Sensing and Timing in Change," Educational Leadership, XXVII (January, 1970), pp. 341-342.

The author encourages instructional leaders to become students of the society which schools serve. He believes that the greatest need of supervisors and curriculum workers is to develop problem-solving skills and perspectives involving the direct application of conceptual insight into contemporary issues of educational policy and leadership.

Haney, Thomas R. "Communication: Authority and Innovation," Catholic High School Quarterly, XXVII (April, 1969), pp. 13-16.

A principal who is a mature leader is willing to communicate openly with his faculty. This communicative mentality forms a base for the innovative mentality, which is described as a willingness to innovate. A proper authority mentality consists of the principal sharing only enough power to prevent the situation from becoming authoritarian. A proper mentality on the part of the educational leader towards communication, innovation, and authority can lead to an exhilarating, challenging, self-actualizing type of creative education.

Hansen, Duncan N., and William L. Harvey. "Impact of CAI on Classroom Teachers," Educational Technology, X (February, 1970), pp. 46-48.

The authors believe that with the computer assuming the major responsibility for information dissemination, the teacher's role is likely to revolve around human relations, instructional strategies, construction of learning materials, and learning research.

Hayes, Paul C. "The Effect of Planned Change on the Local School," Theory Into Practice, V (February, 1966), pp. 46-50.

The author portrays a structure for innovation. He stresses that the superintendent should strive for a school structure that offers maximum opportunity for change and minimum conflict within the system, or at least keeps conflict at a level that the district can understand and manage.

Hazard, William R. "School Administrators as Change Agents: A Role Dilemma." Paper presented at the Annual Meeting of the American Association of School Administrators, Atlantic City, N. J., February, 1969. (ED 027 641)

The role of school administrators is seen as a screen or filtering mechanism for externally-based change ideas. The author considers it unrealistic for administrators to be expected to conceive and promote radical change in schools in light of their role. As a result of this role dilemma, militant teachers and activist students are seen as assuming the role of change agent in many schools.

Heath, Douglas. "Education," Independent School Bulletin, XXIX (October, 1969), pp. 8-12.

Three propositions are suggested:

1. Our contemporary students are probably better educated, but are less educable than students used to be.
2. They are also less educable for much of the traditional educational fare and style that describes most of our efforts.
3. And they are less educable for the type of emerging problems they will face in their adult world - their world of 1984.

Howe, Trevor G. "Role of the Researcher in Dissemination," Journal of Industrial Teacher Education, VI (1968), pp. 58-62.

The author suggests that solutions to the problems of the dissemination of educational research include linking systems and roles, specialized communication media, and the development of new inclusive systems which would enable researchers and practitioners to be parts of the same organization.

Howland, W. E. "The Argument: Engineering Education for Social Leadership," Journal of Technology and Culture, X (1969), pp. 1-10.

The author recommends that engineers ought to step out of their narrow technological enclosure and apply their proved effective methods to the urgent economic, political, and social problems that must be solved if their technology is to serve mankind.

Jensen, Mary E. "The Role of the Administrator in Facilitating Innovation in Community Colleges." Los Angeles: University of California at Los Angeles, December, 1969. (ED 031 213)

The administrator in a community college, in order to create a climate conducive to innovation, should:

1. Plan for change.
2. Encourage faculty to take initiatives in introducing innovation.
3. Involve faculty in planning and implementing innovations.
4. Grant release time to innovative faculty members.
5. Provide financial support for innovation.
6. Evaluate innovations.
7. Provide supportive services.
8. Assure faculty that their position does not rest on the success or failure of an innovation.
9. Require faculty to plan and report on projects.
10. Determine whether an innovative climate exists.
11. Study the organizational structure of the institution to see whether it has an influence on innovation.

Job Descriptions: How to Write Them, How to Use Them. Washington, D.C.: Educational Service Bureau, 1966.

Job descriptions are defined as written records of the functions of various positions. Advice on the construction and use of job descriptions is offered under the following categories: (1) some terms defined, (2) getting ready to prepare job descriptions, (3) make the undertaking a cooperative one, (4) how to write job descriptions, and (5) sample job descriptions.

Johnson, Homer H., and Richard R. Izzett. "Relationship Between Authoritarianism and Attitude Change as a Function of Source Credibility and Type of Communication," *Journal of Personality and Social Psychology*, XIII (1969), pp. 317-321.

The authors found a direct relationship for authoritarianism level and attitude change only for the message that yielded substantial attitude change variance.

Katz, Elihu, *et al*. "Doctor-Patient Exchanges: A Diagnostic Approach to Organizations and Professions," *Human Relations*, XXII (August, 1969), pp. 309-324.

A method is described for the content analysis of interaction between officials or professional practitioners and their clients, and speculation is offered as to the method's possible utility for the diagnosis and evaluation of organization and professional performance.

Kline, Charles E. "Leader Behavior, Curricular Implementation and Curricular Change," Paper presented at the Annual Meeting of the American Educational Research Association, Chicago, February, 1966. (ED 027 596)

A study was executed to explore and establish empirically whether or not relationships existed between certain perceived curricular leader behaviors and curricular plan implementation and perceived extent of change contained in those implemented plans. No all-inclusive significant relationships among these elements were established.

Klopf, Gordon J. "Interaction Processes and Change," *Educational Leadership*, XXVII (January, 1970), pp. 334-338.

Consultation is seen as a pivotal process in staff development programs. It is described as using the techniques of dialogue, encounter, confrontation, and, in some cases, counseling.

Krapfl, Jon E., and M. Mike Nawas. "Client-Therapist Relationship Factor in Systematic Desensitization," *Journal of Consulting and Clinical Psychology*, XXXIII (1969), pp. 435-439.

The authors question the proposition that the therapist must accept the patient, establish a nurturant role, and then use the relationship as leverage to make the patient confront his fears.

Lieberman, Ann. "The Effect of Principal Leadership on Teacher Morale, Professionalism and Style in the Classroom." Paper presented at the Annual Meeting of the American Educational Research Association, Minneapolis, March, 1970.

A study was conducted to determine whether there was a relationship between the elementary principal's leadership and teacher morale, professionalism, and style in the classroom. It was found that only principal authority had any significant relationship to teacher authority, but the relationship was weak.

Lopata, Helena. "Social Psychological Aspects of Role Involvement," Sociology and Social Research, LIII (1969), pp. 285-298.

The author investigates the social psychological aspects of role involvement by focusing on the following nine aspects of role involvement: (1) the location of the role within a hierarchy of importance; (2) the richness of the institutional dimension, or the number of other roles based on the same institution; (3) the degree of institutional multi-dimensionality of the social life space; (4) the role segment which is emphasized; (5) the degree of task or relation orientation; (6) the perception of duties as disjoined incidents, sets of processes or in terms of product alone; (7) the location of the approach along a passive-reactive-initiating continuum; (8) the types and degrees of sentiments; and (9) the judgment of the self in the role.

Lucio, William H. (ed.). The Supervisor: New Demands, New Dimensions. Washington, D. C.: Association for Supervision and Curriculum Development, 1967.

Seven papers are presented which attempt to deal with the role of the supervisor, who is facing new social, organizational and professional demands.

Maguire, Louis M. "Change Literature and the Practicing School Administrator." Paper presented at the Annual Meeting of the American Educational Research Association, Minneapolis, March, 1970.

The author's premise is that there is little practical help from the literature for the school administrator in dealing with problems of change. Twelve underlying causes which support the major premise are listed. Implicit in this presentation is the point that communication problems between theoretician and user are fundamental and salient.

Mahan, James M. "The Teacher's View of the Principal's Role in Innovation," *The Elementary School Journal*, LXX (April, 1970), pp. 359-396.

Teachers from thirty-seven schools sending participants to an inservice workshop were asked to rank the following as initiators of innovation: school board, department heads, subject supervisors, district superintendent, principal, teachers, parents, and other central office personnel. While the principal was considered to be the chief initiator of innovation in most cases, the results showed great variation from district to district. It is suggested that, prior to introduction of a major educational change, an effort be made to pinpoint the initiator of innovation in that particular district.

Martin, Warren Bryan. "The Consequences of the Consequence," *CTA Journal*, LXV (January, 1969), pp. 18-20.

The author speculates as to the directions in which youth will change education.

Martin, Warren Bryan. "The Development of Innovation: Making Reality Change." Berkeley: Center for Research and Development in Higher Education, University of California, 1968. (ED 026 004)

An innovator's perspective is presented on the realities of the present situation, particularly conditions for administrators, faculty, and students, that affect the likelihood of change. Certain ideas are examined which appear to have relevance for institutional realities: job circuits and the systems approach for administrators. A shift in emphasis towards an educational philosophy that might involve faculty and students in unstructured, informal, more dynamic relationships is noted. Three suggestions for changing negative attitudes and establishing a positive climate for the development of innovative ideas are made: (1) utilizing *Change*, a magazine aimed at relieving the limited knowledge that now characterizes the educator's situation; (2) conducting workshops on educational change; and (3) establishing connections with the various research and development centers across the nation.

McPherson, R. Bruce. "Administrators and the Inner-City Increase of Power," *School Review*, LXXVIII (November, 1969), pp. 105-113.

The assumption that there are not only new sources of power to be acknowledged but also new quantities of power to be made available permits community residents and educators to concentrate on the development of processes and mechanisms which will create more power for all of the participants in school governance at local levels in the cities. The author believes that the conditions for change in the local schools of the inner city appear to involve the conflict and collaboration of the principal, teachers, parents, and students.

Miller, Peggy L. "A Man to Fill the Gap: The Change Agent," Journal of Health, Physical Education, and Recreation, XL (October, 1969), pp. 34-39.

The author offers seven prescriptions for the change agent role:

1. The change agent should identify the characteristics and needs of the client system and base plans upon them.
2. The change agent should seek, and play a major role in, the establishment of rapport and the building of mutual trust and respect between the client system and himself.
3. The change agent should view the change process as a mutual, collaborative, reciprocal undertaking between the client system and himself.
4. The change agent should identify key leaders, formal and informal, in the client system and work with them.
5. The change agent should understand the communication-diffusion of innovations process and utilize a strategy in working with the client system.
6. The change agent should seek continual self-improvement in performing his role.
7. The change agent should teach the clients to be their own change agents, to understand the process of change, to develop self-renewing behavior.

Miller, Richard I. "Regional Educational Laboratories," Phi Delta Kappan, XLVIII (December, 1966), pp. 144-149.

The nature and functions of the regional educational laboratory program are described.

Miller, Roger S. "Radnor's Curriculum Planning," Pennsylvania School Journal, CXIX (April, 1971), pp. 276-285.

This article presents a year-by-year report of a process used to change the mathematics curriculum of a suburban school district. A not-for-profit corporation worked directly with teachers to define and achieve the goals of the program. It was an example of educational innovation from classroom to district headquarters with teacher involvement from the beginning and shows the willingness of teachers to be involved in educational change and their ability to make unique contributions to the planning process.

Moore, Nathaniel H. "Power and the Powerless," Educational Leadership, XXVII (January, 1970), pp. 389-391.

The author suggests that current educational themes and the supervisor's position in carrying out his function as change agent for educational program improvement be examined in relation to the effects of teacher militancy and student unrest. The unifying concept in his discussion is power, which he defines as the maximum responsibility to help others make the most significant contributions possible in their educational setting. He believes that the power of a successful curriculum supervisor will depend upon the development of power for others.

Morris, Charles G., and J. Richard Hackman. "Behavioral Correlates of Perceived Leadership," Journal of Personality and Social Psychology, XIII (1969), pp. 350-361.

In analyses of transcripts from 108 three-man groups, it was found that perceived leaders participated significantly more than nonleaders in three different types of tasks (production, discussion, and problem solving). Other behavior differences between leaders and nonleaders are disucussed.

Nicholson, Everett W., and Charles D. Robinson. "Methods of Achieving Racially Balanced Faculties: Their Relationships to Teacher Morale." Paper presented at the Annual Meeting of the American Educational Research Association, New York, February, 1971.

This study examined the effects on teacher morale of the process of reassignment of teachers in the Indianapolis Public Schools to achieve racial balance.

Niemann, Ralph A. "Pitfalls in R&D Management," Personnel, XLVII (January-February, 1970), pp. 46-49.

The author offers the following advice to the research and development administrator:

1. The research and development administrator should centralize certain functions, but not worship centralization.
2. He should provide guidelines and goals without falling into the trap of overreacting and writing too many negative regulations derived from past experience.
3. He should create the environment of an open organization that has free discussion, where some mistakes are accepted.
4. He should be specific about his directives and requests for information.
5. He should look toward the future without ignoring the present.
6. He should plan and coordinate his work with due regard to its effect on other programs.
7. He should communicate his position and plans as freely and explicitly as possible to his employees.

Novotney, Jerrold. Viewing the System: Human Interaction. Santa Ana, Calif.: Orange County Schools Office Supplementary Educational Center, December, 1968.

The author views the system from the people point of view. Throughout his discussion of the individual, group research and group operation, conflict, resistance, and leader and leadership, he emphasizes that knowledge of human beings and the principles of human interaction is of utmost importance. He believes that successful change agentry starts with unfreezing the system, but the system is viewed as a framework of human beings.

Nystrand, Raphael O. "High School Students as Policy Advocates." Paper presented at the Annual Meeting of the American Educational Research Association, Los Angeles, February, 1969.

Students can organize themselves to present demands to school officials, and some of the things which they call for can be negotiated successfully.

Olivero, James L. "The Meaning and Application of Differentiated Staffing in Teaching," Phi Delta Kappan, LII (September, 1970), pp. 36-40.

Differentiated staffing is a technique for opening up routes of financial and professional rewards to teachers that are viable alternatives to the teacher-to-administrator route of traditional promotion. One such technique is used in Temple City, California, where teachers may progress from Academic Assistants to Master Teachers through a five-step promotional ladder. The author discusses the benefits of such alternatives and presents several possible methods of designing and implementing differentiated staffing.

Panush, Louis, and Edgar A. Kelley. "The High School Principal: Pro-active or Reactive Roles?" Phi Delta Kappan, LII (October, 1970), pp. 90-92.

The authors believe that principals have to maintain a delicate balance in their attitude toward change. While a reactive function has been served by those principals who have remained tied to models of action which fail to consider new social demands, some principals have opted so strongly for change that balance and perspective have been lost, both for the individual and for school systems. The authors argue that the principal of now and of the future must be increasingly willing to prepare for wise and critical participation in a society characterized by conflict and chronic change, his pro-active role.

Pappen, William A. "A Strategy for Involving Teachers in Planning Innovations," SEC Newsletter, II (October, 1967), pp. 1-3.

The author describes a four step strategy for involving teachers in planning innovations: (1) communication between the project writer and the teacher, working cooperatively to determine the needs of the pupils, teachers and education community; (2) development of procedures for meeting the existing needs, primarily the responsibility of the project writer; (3) presenting tentative innovative ideas to teachers and gathering their reactions and approval; and (4) the actual writing of the proposal, the responsibility of the project writer.

The Principal. Melbourne, Fla.: Institute for Development of Educational Activities, Inc., 1968.

It is suggested that the principal can direct change by controlling the ebb and flow of forces within his organization. A principal's moves to bring about change must be made with complete knowledge of the nature of the group with which he is working, the value of the goal he is seeking, and the impact of the change which he desires. It is suggested that a principal who is interested in effecting change answer the following questions:

1. Exactly what kind of change do I, as a principal and change agent, desire to see made?
2. What factors favor introduction of change and what factors oppose it?
3. What is known about change in organizations that directly bears upon what I, as principal, am trying to get my staff to do?
4. What alternative modes of action are available to me as I initiate the change process?

Profiles of the Administrative Team. Washington, D.C.: American Association of School Administrators, 1971.

This book discusses the current practices of deputy, assistant and associate superintendents and recommends some modifications in their activities. It discusses the organizational structure of school systems in America, the role of the assistant superintendent and his relationships with the superintendent, the board of education, the community, the teachers and the principals. The qualifications needed for such posts are explored and suggestions are made for enhancing the assistant superintendent's role. The book then takes up the duties of assistant superintendents in the areas of instruction, business affairs, personnel services, pupil services, school-community relations and human relations.

Reynolds, James A. "Curriculum Reform and Social Behavior," Educational Leadership, XXV (February, 1968), pp. 397-400.
The author suggests that curriculum specialists can increase their effectiveness by focusing upon both the content and the process of change. He believes that the process of change has been severely neglected.

Rogers, Carl R. "Interpersonal Relationships: U.S.A. 2000," Convergence, II (1969), pp. 40-47.
The author discusses whether man can leave the static ways and guidelines which have dominated all of his history and adopt the process ways, the continued "changingness" which must be his if he is to survive.

Rowe, Lloyd A., and Sandra P. Schoenberg. "No More Book-Type Urban Administrators," The American City, LXXXIV (December, 1969), pp. 83-84.
It is argued that today's professional administrator makes decisions pressed by the physical and social demands and constraints of the complex urban environment, which no book explains or defines.

Schwartz, Norman B. "Conflict Resolution and Impropriety in a Guatemalan Town," Social Forces, XLVIII (1969), pp. 98-106.
The author investigated a case where certain actors, because of the cultural impropriety of their behavior, were able to act as go-betweens for other actors whose statuses inhibited the composition and resolution of their differences.

Sealey, Leonard. "Innovation and Experimentation in the Elementary School," Independent School Bulletin, XXIX (October, 1969), pp. 51-54.
The history of educational innovation and change shows that some outside agency normally provides the genesis of thought and action. But once the initial thrust has been made, the real responsibility for effecting changes lies with the teacher. The author considers some of the important qualities and skills which teachers need: (1) clinical skills and the associated personal qualities, (2) managerial skills, (3) interpretive and evaluative skills, and (4) creative abilities.

Selden, David. "The American Federation of Teachers Views the Teacher's Changing Role," Educational Technology, X (February, 1970), pp. 77-80.
The author argues that any fundamental change in the traditional role of the teacher would require a change in the entire established pattern of education.

Snider, Robert C. "The National Education Association Views the Teacher's Changing Role," *Educational Technology*, X (February, 1970), pp. 75-76.

The view is that the National Education Association welcomes the changing role of the teacher that is inherent in the promise of educational technology.

Strachan, Dora L. "Innovation in Educational Technology," *International Journal of Science*, III (Summer, 1969), pp. 155-159.

The author emphasizes that the teaching profession should enter the search for an answer to the problem of innovation with a more open mind, but inventors also should share the responsibility.

Thompson, Jack M. "The Relationship Between Carl Rogers' Helping Relationship Concept and Teacher Behavior," *California Journal of Educational Research*, XX (September, 1969), pp. 151-161.

The following attitudinal or experiential elements are related to teacher behavior: (1) congruence, (2) empathy, (3) positive regard, and (4) unconditional regard. The author's hypothesis is that the quality of the teacher-pupil helping relationship is related to teacher effectiveness.

Ward, Joe H., Reeve Love, and George M. Higginson. "The Educational Catalyst in the Improvement of Educational Systems." Austin, Tex.: Southwest Educational Development Laboratory, March, 1970.

The authors attempt to describe the need, role and operations of a change agent in terms of an educational catalyst.

Warner, Frederick. "Changing Society and the Responsibility of Engineers," *Engineering Education*, LX (November, 1969), pp. 235-236.

The author urges engineers to communicate their sense of achievement and power to their fellow citizens and to utilize their achievement and power in their politics.

Weisse, Edward B. "Teacher Competition: Agent for Educational Change," *The Educational Forum*, XXXIV (January, 1970), pp. 247-250.

On the assumption that quality cooperation is an outcome of competition, the author suggests that a teacher's pay be commensurate with the number of students he can draw.

Wheeler, James E. "Social Unrest and Militancy: Their Importance for Administration," *Illinois State University Journal*, XXXII (1969), pp. 47-56.

The author emphasizes that the participation of students in the planning and prosecution of their own education should be recognized, that the full meaning of such participation should be systematically and sympathetically explored, and that the necessary arrangements should be made to structure and institutionalize such participation.

Williams, John D. "Instructional Agents as Transmitters of Research Findings," *International Journal of Review of Education*, XV (1969), pp. 460-476.

The author compares several instructional agents which can be used for controlling learning situations and which might exercise control in such a way that they implement the findings of educational research. These agents are the conventional textbook, the film, "manipulanda" (devices that the learner can manipulate with relative freedom, such as tape recorders and mathematical apparatus, and which can provide him with feedback relating to the success of the manipulation), programmed instruction, and the human tutor. These agents are compared in terms of the kinds of research finding they are suitable for transmitting, the aspects of the learning situation they are suitable for controlling, and some factors which tend to determine both the degree of transmission and the kinds of findings that are transmitted.

Wilson, Joseph C. "Leadership for Change," *Personnel Administration*, XXXII (September-October, 1969), pp. 4-7, 14, 15.

The author believes that those who aspire to be tomorrow's business leaders face chilling demands and must, therefore, develop and retain a lively and active curiosity in every aspect of life. Their skill in discerning the real needs of society, their imaginativeness in applying their insights to the development of goods and services, and their courage in evaluating and accepting the risks arising from the uncertainties that will surround them will constitute the acid test of leadership as an entrepreneur, rather than a manager.

Wisniewski, Richard, and Matthew B. Miles. "Educational Researchers and Social Values: A Preliminary Report." Paper presented at the Annual Meeting of the American Educational Research Association, Minneapolis, March, 1970.

This paper reports on a study which sought to determine the social values of members of the American Educational Research Association (AERA). It was found that a considerable amount of activist orientation toward social, political, and educational issues exists, in spite of the members' belief to the contrary.

Yaney, Joseph P. "The Management of Innovation," *Personnel Journal*, XLIX (March, 1970), pp. 224-225.

The author characterizes the successful innovator as follows: he is an individual who: (1) has been with the company longer, but is new to this type of behavioral assignment; (2) has the feeling that his own skills and knowledge are above average; and (3) perceives more organizational concern and support for his project and the new technology.

V. TRAINING FOR CHANGE ROLES

Altschuler, Alfred S. "Humanistic Education," Educational Technology, X (May, 1970), pp. 58-61.

The author describes a four phase change strategy for maximizing the likelihood of effectively introducing humanistic education in a school: (1) selection, (2) diagnosis, (3) introductory training, and (4) follow through. The introductory training would follow a six-step sequence:

1. Focus attention on what is happening here and now by creating moderate novelty that is slightly different from what is expected.
2. Provide an intense, integrated experience of the desired new thoughts, actions and feelings.
3. Help the person make sense out of his experience by attempting to conceptualize what happened.
4. Relate the experience to the person's values, goals, behavior and relationships with others.
5. Stabilize the new thought, action and feelings through practice.
6. Internalize the changes.

Andrews, Joseph K. "The Results of a Pilot Program to Train Teachers in the Classroom Application of Behavior Modification Techniques," Journal of School Psychology, VIII (1970), pp. 37-42.

The author describes how a four week in-service pilot program enabled elementary teachers to effect changes in classroom behavior.

Baker, Robert L. Planning Educational Experiments. Summer Institute, Final Report. Tempe: Classroom Learning Laboratory, Arizona State University, May, 1967. (ED 021 792)

This is a report on an eight week summer institute to train twenty-five school personnel in the necessary methodological skills to initiate, conduct, and report experiments on school learning and instruction.

Berger, Milton M. "Experiential and Didactic Aspects of Training in Therapeutic Group Approaches," American Journal of Psychiatry, CXXVI (December, 1969), pp. 845-850.

It is the author's view that the integrated mixture of the experiential and didactic in training programs may allow more group leaders to function humanistically as well as scientifically.

Bohn, Ralph C. "Vehicle for Change in Industrial Arts," American Vocational Journal, XLIV (September, 1969), pp. 28-30.

The author states that the teachers in the classrooms are the ones who will determine whether recommended changes in education are implemented or dropped. The process of replacing retiring teachers and adding teachers with new abilities, which has produced most changes in the past, is viewed as too slow for modern technology and insufficient for current demands. Implementation of educational change in industrial arts is seen as requiring three ingredients: (1) need and rationale for desired changes, (2) technical and professional knowledge, and (3) educational media. These three ingredients are brought to the classroom teacher by inservice education so that the current teachers are the ones to introduce the new concepts and new ideas into the schools.

Cady, Lillian V., and Wendell C. Allen. "Preparing Teachers to Meet Change: One State's Approach," Educational Technology, X (February, 1970), pp. 71-72.

The author describes how the State of Washington has been developing preparation programs which help teachers meet the challenges and demands placed upon them.

Cameron, Walter A., and Calvin J. Cotrell. "Assessment of Micro-Teaching and Video Recording in Vocational and Technical Teacher Education: Phase X--Remote Feedback Techniques for Inservice Education." Columbus: The Center for Vocational and Technical Education, Ohio State University, August, 1970.

The authors report on a study whose purpose was to field test three remote feedback techniques developed for inservice teacher education. They found that the application of the techniques in inservice programs was feasible and that the techniques helped beginning teachers analyze and change their behavior.

Cernius, Vytas, and Mary Lela Sherburne. "The Innovation Team: Model for Change in Inner City Schools?" Newton, Mass.: Educational Development Center, August, 1969. (ED 029 811)

To shift the balance toward change in the 24 inner-city schools of the Model Schools Division, an experiment in innovation trained 300 District of Columbia public school teachers in new curriculum materials and methodologies during two 6-week summer sessions.

Cooper, Cary L. "The Influence of the Trainer on Participant Change in T-Groups," Human Relations, XII (December, 1969), pp. 515-530.

The author states that an interesting and consistant pattern emerges relating to the perceived characteristics of the trainer to the changes found in participants in sensitivity training groups. When the trainer is seen as attractive, participants identify

with him and become more like him in attitude and behavior. When the trainer is seen as self-congruent, participants change in ways that foster their own congruence.

Cottle, Thomas J. "Strategy for Change," Saturday Review, (September, 1970), pp. 70-71, 79-82.
The author discusses a training program developed for Bristol Township (Pa.) schools, which was based on three assumptions about the nature of change and the ways in which resistance to change can be overcome. First, the training program must be strongly and consistently supported by the district's educational leaders - the superintendent and his top staff. Second, the program must include the entire school community. The superintendent, his staff, and the entire teaching force must participate; ideally the program should include important lay members of the community as well. Third, training must be focused on personal growth for organizational adaptation to change, rather than on personal growth alone.

Culbert, Samuel A. "Accelerating Laboratory Learning Through a Phase Progression Model for Trainer Intervention," Journal of Applied Behavioral Science, VI (January-February-March, 1970), pp. 21-38.
The author describes a methodology for accelerating a sensitivity training group's rate of learning. He labels it a phase progression model for trainer intervention.

Culbertson, Jack, and Robin H. Farquhar. "Preparing Educational Leaders," UCEA Newsletter, XII (January, 1971), pp. 11-14.
The authors discuss a 1968-69 University Council on Educational Administration (UCEA survey concerning the structure of graduate programs to prepare educational administrators. The survey revealed that changes were occurring in two seemingly antithetical directions: (1) greater flexibility in terms of adaptability to individual students' needs and to changing problems and issues in the field, less regulation by state certification requirements, and a decrease in the number of prescribed experiences; and (2) increased structure in terms of better integration, coordination, balance, and sequence among program elements. The authors recommend the development of differentiated programs for preparing researchers, developers, synthesizers, and administrators which would lead to more effective structure.

Denova, Charles C. "Training Evaluation Causes Change In Behavior," *Personnel Administration*, XXXII (September-October, 1969), pp. 54-56.

Evaluation of trainees by their supervisors as opposed to evaluation by members of the training staff was found to change the attitudes of the supervisors toward the trainees favorably.

English, Joseph T. "Sensitivity Training: Promise and Performance," *American Journal of Psychiatry*, CXXVI (December, 1969), pp. 874-876.

A proliferation of sensitivity training programs aimed at persons in educational, industrial, and community settings is currently being witnessed. Variations of sensitivity training programs have been established that purport to train community development leaders, promote international relations, secure labor-management harmony, increase marital happiness, and resolve other thorny problems via the T-group method of enhancing interpersonal communications. That so much has been promised by sensitivity training and so little delivered by evaluation and research suggests that psychiatrists should be increasingly aware and distressed about these programs.

Farquhar, Robin. "Educational Leadership and School Organization in the 1970's." Paper presented at the Annual Meeting of the American Educational Research Association, Minneapolis, March, 1970.

The author discusses six societal forces which were judged to be among the most significant forces currently impacting upon education: (1) the federal thrust in education; (2) the Negro protest movement; (3) the changing character of the "business-education interface;" (4) the increase in teacher militancy; (5) the diffusion of special management technologies into education; and (6) the growth of research and development in education. It is stressed that efforts to restructure administrative preparation must be informed by an understanding of these forces and their impacts.

Farguhar, Robin H. *The Humanities in Preparing Educational Administrators*. Eugene: University of Oregon, 1970.

The author outlines the recent history of educational administration and the social and ethical reasons for giving a role to the humanities in the training of educational administrators. He reviews the work that has been done in exploring such a role and the humanizing contributions that the study of the humanities can make towards more effective educational management. The book contains a report on the current status of the humanities as a part of the curriculum for training such administrators at various universities and suggestions for the enhancement and improvement of such programs.

Ferreira, Joseph L. "The Administrative Internship and Role Change: A Study of the Relationship between Interaction and Attitudes," Educational Administration Quarterly, VI (Winter, 1970), pp. 77-90.

In analyzing the nature of educational administration internship programs, the author proposes that the attitudes of interns are not directly affected by exposure to a role-model, but that the quantity and quality of interaction with significant others are associated with attitude change.

Frankiel, Harry H., and Saul Eisen. "The Use of Laboratory Methods in Developing Managerial Competence," Business Quarterly, XXXIV (Winter, 1969), pp. 72-79.

The practice of organizational development consists, in part, of developing individuals' capacities and skills of acquiring valid information about the human aspects of the organization, skills in behaving adaptively in interpersonal situations, and skills in coordinating planning with others in the organization. The author identifies action research, internal consulting, counselling, and laboratory training as strategies which have been designed to assist managers and organizations in these efforts. Of these strategies, laboratory training is seen by the author as one of the most effectively developed. Five designs which encompass much of the current variety in laboratory training are described: (1) stranger laboratory groups, which are composed of people who typically are not acquainted with one another and do not come from the same organization; (2) cousin laboratory groups, which are composed of people who work within one organization, but do not have close relationships with one another; (3) team development laboratories, which are generally composed of people who are involved in performing a specific task in the organization; (4) inter-departmental laboratories, which are a variant of team development laboratories and which are composed of key members of different departments; and (5) inter-group laboratories, which are composed of people from different departments in the organization, or one group from inside the firm and the other outside.

Gottschalk, Louis A., and Mansell Pattison. "Psychiatric Perspectives on T-Groups and the Laboratory Movement: An Overview," American Journal of Psychiatry, CXXVI (December, 1969), pp. 823-839.

The laboratory movement arose in the 1930's as an effort to develop educational action programs that could teach citizens to function more effectively and democratically in a variety of group settings. It has developed in many divergent directions, some of which bear little or no relationship to the original goals. The authors define three different group activities that are subsumed under laboratory training: (1) the sensitivity, personal encounter, or T-Group, which is the most widely known and most closely approaches traditional group therapy; (2) the task-oriented group, which involves structured group exercises aimed at teaching group function skills; and (3) intervention in the community or industry. The authors point out that the instruments developed in the laboratory movement offer powerful potential for effecting human change. They warn, however, that deficits of training, critical evaluation, or precision of goals among those involved in the use of such instruments may lead to destructive rather than beneficial results.

Gregg, Russell T. Final Report: Research Training Institute for Personnel of State Departments of Education. Madison: Wisconsin University, October, 1967. (ED 026 720)

The author reports on a four week institute which sought to improve the research knowledge and skills of personnel of state boards of education.

"Grooming Tomorrow's Managers," SDC Magazine, XIII (January, 1970), pp. 3-16.

Emphasis is placed on the need for a more responsive curriculum for tomorrow's managers which stays current with the rapidly changing needs of society.

Guerin, Quintin W. "Confrontation is the Media of Change," Training and Development Journal, XXIII (November, 1969), pp. 5-7.

Confrontation is described as a situational setting where two or more cognitive factors come into contact with each other with the purpose of comparing or discerning likenesses and differences. The author believes that the training techniques of role playing, case studies, simulation, sensitivity groups, management grids, counseling, etc., become most relevant in the process of inducing, creating and resolving inconsistencies which are made known through the media of confrontation.

Hall, Jay, and Martha S. Williams. "Group Dynamics Training and Improved Decision Making," Journal of Applied Behavioral Science, VI (January-February-March, 1970), pp. 39-67.

The authors investigated the efficacy of laboratory training in group dynamics as a technique for modifying group processes in the direction of theoretically more effective practices. They found that groups which underwent laboratory training consistently performed more effectively than untrained groups on measures of decision quality, utilization of superior resources, and creativity.

Halpin, Andrew W. "A Foggy View from Olympus," Journal of Educational Administration, VII (May, 1969), pp. 3-18.

The author feels that an obsessional preoccupation with "change" has diverted efforts away from basic research, has induced intellectual homogenization within the academic community, and has bombarded administrators with so many exigencies that their planning efforts have been increasingly concentrated upon short-term perspectives, at best. He discusses four serious concerns that must be currently dealt with in graduate programs: (1) the mythology of human motivations, (2) the juggernaut of "the Technological Society"; (3) the mythology of change; and (4) the impact of existentialism upon modern man.

Hanson, Philip G., et al. "Training Patients for Effective Participation in Back-Home Groups," American Journal of Psychiatry, CXXVI (December, 1969), pp. 857-862.

The Human Relations Training Laboratory, a problem-centered patient-group education program utilizing the feedback method, encourages self-expression, helps participants to recognize and develop their own assets and resources, enables them to contribute something of value, and engages them in creative decision making. Most participants selected for the program suffer from anxiety and depressive reactions, character disorders, and alcoholism; the problem involves moving the participant from external toward internal control. The authors summarize results of several evaluation studies.

Haubrich, Vernon. "Obstacles to Change: The Westchester Report." Occasional Paper Four. Washington, D. C.: The NDEA National Institute for Advanced Study in Teaching Disadvantaged Youth, October, 1968. (ED 033 894)

The author describes a summer training program which sought to improve teachers' ability in the handling of disadvantaged youth and teachers' understanding of the concerns of their parents. Improvement in these areas is felt to be a major way of bringing about educational change.

Hofman, John E., and Itai Zak. "Interpersonal Contact and Attitude Change in a Cross-Cultural Situation," Journal of Social Psychology, LXXVIII (August, 1969), pp. 165-171.

It was hypothesized that interpersonal contact in a cross-cultural situation would be associated with attitude change. A group of secondary school pupils from the U.S. and Canada, of Jewish background, who attended a summer camp at an Israeli youth village, were observed with reference to the contact each established with Israeli peers. Before and at the end of camp their attitudes toward Jewishness and Israel were assessed. Subjects were divided into high and low contact groups: high contact campers became more favorable in their attitudes, while low contact campers did not change at all or became less favorable in their attitudes, as predicted.

House, Ernest R. "Training Non-Research Personnel to Conduct Evaluation," *Contemporary Education*, XL (May, 1969), pp. 324-326.
The author describes a two-week program aimed at training relatively unskilled public school personnel in evaluation work.

Hughes, Larry W. "Change Agents for Appalachia," *Appalachian Advance*, III (March, 1969), pp. 2-3.
The author describes a new master's degree program at the University of Tennessee which has as its focus the preparation of administrator/change agents for southern Appalachia.

Hughes, Larry W., and C. Kenneth Tanner. "An Evaluation Procedure for a New Program to Prepare Administrator Change Agents," *Educational Administration Quarterly*, VI (Spring, 1970), pp. 46-55.
Four assumptions of a new program to prepare administrator/change agents are portrayed as follows:

1. It is possible to educate a person to perform the role of a change agent in the school.
2. The person who can, within the educational bureaucracy, most effectively bring about local school change is the ascribed leader of the school--the principal.
3. Individuals who have already achieved some degree of acceptance in the school organization and/or community are more likely to be able to speed the process of change than those who have not.
4. The realities of recruitment of administrators to function in schools in southern Appalachia are such that primarily local teachers currently working in those schools provide the best (and perhaps only) leadership source.

Johnson, Donald W. *Systems Technology (A Status Report from a Metropolitan School District)*. Jacksonville, Fla.: Duval County School District, (n.d.).
The author reports on a school district personnel training program implemented in Jacksonville. The program used the SAFE (System Approach for Education) materials developed by Dr. and Mrs. Robert Corrigan, who also conducted the first class. The paper describes the organization of the first program and some of the benefits derived from the training. Specifically, the author details the development and implementation of a major faculty integration plan which he claims was successfully implemented with a minimum of confusion. The paper concludes with a listing of some difficulties encountered and some suggestions for future actions in developing a SAFE training program.

Kirkpatrick, Doanld L. "The Training Manager and Motivation---A Review of Basic Literature," Educational Technology, IX (September, 1969), pp. S32-S35.

The author briefly describes the theories of motivation developed by Maslow, McGregor, Heizberg, and McClelland, and suggests the following guidelines for effective motivation:

1. Each individual has his own needs that must be satisfied if he is going to put forth maximum effort.
2. An individual's needs can vary over a period of time. When one need is satisfied, another tends to emerge.
3. Every manager must establish a climate in which the individual's needs can be met. This climate must have two different dimensions: (a) the way the manager manages (the amount of freedom he allows, the effectiveness of his communications, his interpersonal relationships, etc.); and (b) the nature of the job the person is doing (routine and monotonous, or challenging and rewarding).

Kuehn, John L., and Francis M. Crinella. "Sensitivity Training: Interpersonal 'Overkill' and Other Problems," American Journal of Psychiatry, CXXVI (December, 1969), pp. 840-845.

The authors believe that not enough attention is being given to ecologic considerations, leadership, technical problems of selection, and some ethical concerns in sensitivity training.

Langmeyer, Daniel, Richard A. Schmuck, and Philip J. Runkel. Technology for Organizational Training in Schools. Eugene, Oreg.: Center for the Advanced Study of Educational Administration, 1969.

This paper describes an organizational training methodology where the focus of intervention is on the organizational interactions of role occupants, not on personalities. The emphasis is on problem-solving and/or communicative skills involving seven steps:

1. Initial contact with members of the school district.
2. Commitment from the school district and from us of specified amounts of time and energy; setting up the contract; establishing our role as consultant, change-agent, and trainer; clarifying the status of the trainer as consultant to the entire school district rather than to one segment such as the administrators.
3. Data-gathering concerning educational goals and concerns--diagnosis.
4. Feedback of data to the target group.
5. Setting goals for organizational training with the target group.
6. Carrying out a training program over an extended time period.
7. Data-gathering concerning effects of the training.

Lansky, Leonard, et. al. "The Effects of Human Relation Training on Diagnosing Skills and Planning for Change." Eugene, Oreg.: Center for Advanced Study of Educational Administration, University of Oregon, July, 1969. (ED 032 652).

The authors conclude that a one-shot laboratory training experience for administrators conducted outside the context of the organizational system within which the participants engaged is not a very effective or powerful tool for initiating and maintaining significant behavior change in the back-home situation.

Lippitt, Gordon L. "Future Trends Affecting the Training and Development Profession," Training and Development Journal, (December, 1969), pp. 7-10.

Seven future trends affecting the training and development profession are portrayed as follows:

1. Organizations will require new structures and new process to cope with change.
2. Many jobs and skills will become obsolete.
3. People will insist on a greater opportunity to be a meaningful part of the organization.
4. Conflict, confrontation, coping and feedback will continue as a way of life.
5. The explosion of knowledge and technology will continue.
6. There is a need for greater interface between government, education, and industry.
7. The emergence of under-utilized groups must be recognized.

Mager, Robert F., and Peter Pipe. "Teacher Training Projects of the Regional Educational Laboratories." Los Altos Hills, Calif.: Mager Associates, September, 1969.

This document consists of a summary of the teacher training programs and projects of the fifteen regional educational laboratories and three selected university-based research and development centers.

McCroskey, James C., and Walter H. Combs. "The Effects of the Use of Analogy on Attitude Change and Source Credibility," Journal of Communication, XIX (December, 1969), pp. 333-339.

The authors examine the effects of two types of analogy on attitude change and source credibility. Subjects were exposed to either a literal, figurative, or no-analogy message. Comparison of attitude change scores and terminal source credibility ratings by message condition indicated that both the literal and figurative versions produced greater attitude change than the no-analogy version. Differences in source credibility ratings were not attributable to the use of analogy. The authors discuss the need for further research in the area and present two tentative explanations of their findings.

Mial, Dorothy. Special Project to Train Action Researchers and Trainers of Action Research Collaborators. Final Report. Washington, D. C.: Institute for Applied Behavioral Science, National Training Laboratories, August, 1967. (ED 021 783)

The author details a project designed to train personnel to link the activities of school staffs and social scientists in order to reduce the gap between new educational knowledge and change in practice.

Mungall, Constance. "Sensitivity Training: Making the Executive Aware," Canadian Business, XLII (May, 1969), pp. 54-59.

Sensitivity training is described as a method which will help managers get at the root of the communication problem.

O'Hearne, John J., and Donald D. Glad. "Interaction and Insight in Group Psychotherapy: The Case for Interaction," International Journal of Group Psychotherapy, XIX (1969), pp. 268-278.

The authors argue that interaction in group psychotherapy makes it possible to bypass elicitation of insight in favor of enlarging ego boundaries and making it more likely that the patient will risk new action which may lead to increased present and future satisfaction.

O'Neill, John R. "What about Crisis Education?" Educational Leadership, XXVII (October, 1969), pp. 27-29.

The author posits that if one assumes more crisis situations as the fate of institutions, then there are at least two possibilities for educational solution: (1) attempt to train or educate future power managers to solve the basic problems which create crisis; or (2) educate leaders and potential leaders to nimbly manipulate situations and people so that crisis will be reduced and less disruptive. He believes that neither of these solutions is very practical, and suggests that the way out of the collision course and to approach crisis in education lies in two domains: (1) defining crisis as institutional and system failures which have not been accepted by recipients; and (2) redefining education as a total process of learning about the nature of self and the way in which self is enhanced by viable institutions.

Ostrom, Thomas M. "Perspective as a Determinant of Attitude Change," Journal of Experimental Social Psychology, VI (1970), pp. 280-292.

The author investigated the hypothesis that the relationship between one's attitudinal beliefs (content) and the way one labels those beliefs (rating) on an evaluative dimension is mediated by perspective, or the range of alternatives taken into consideration when the individual is making the evaluative judgment.

Pearl, Arthur. "The More We Change, the Worse We Get," Change, II (March-April, 1970), pp. 39-44.

The author believes that the main failing of the university is that it has become an alien institution: it does not relate itself to anything of importance. He argues that the university has the capacity to produce change agents who have a theory of change in which strategies and tactics are specified.

"Preparing Inservice Elementary School Personnel to Lead Classroom Teachers in Implementing Change, A Proposal." Fredonia, N.Y.: College at Fredonia, State University of New York, 1969. (ED 032 248)

A proposal is presented for a six-week campus summer session for the purpose of enabling local school teams, consisting of an administrator, a curriculum supervisor, and classroom teachers from ten school systems in western New York, to develop knowledge and skills which will permit them to become critical change agent teams in their elementary schools. It is hoped that the changes to which they will give rise will be in curricular practices, especially in the sciences and social studies, as developed in several of the newer curricular proposals.

Ross, Calvin, and Kevin Swick. "An Explanatory Study In The Development of Positive Changes in Student-Teacher Attitudes Toward Inner-City Teaching," Education and Urban Society, II (1969), pp. 112-117.

The authors imply that student teachers can gain positive attitudes toward urban teaching through experience in spite of a negative environment and that positive attitudes can be attained by being immersed in an urban school and community situation.

Sieber, Sam D. and Paul F. Lazarsfeld. The Organization of Educational Research in the United States. New York: Bureau of Applied Social Research, Columbia University, 1966. (ED 010 276)

The authors attempted to measure the numerous social conditions which impinge upon the production of research and researchers by graduate schools of education.

Singer, Edwin. "Training: The Condition of Change," Management Today, (February, 1970), pp. 45-47.

It is stated that in the future, companies will have to plan for training for all workers as part of the normal working week. Such training will involve frank discussions about how to solve operating problems and will involve management in the actual training process to a far greater extent than is normal today.

"Summary of the Teacher-Innovator: A Program to Prepare Teachers." New York: Teacher's College, Columbia University, October, 1968. (ED 033 054)

A program to prepare teachers has been designed to illustrate a process for creating teacher education programs and to provide an example of one which is designed to prepare educators who will have the skill and commitment to help create and test new educational forms. The components of the program are based on four future-oriented roles, each involving constant experimentation: (1) institution builder (shaper of the school); (2) innovator (rather than bureaucratic functionary); (3) scholar (academic specialist also involved in the study of teaching and of children); and (4) interactive teacher (instructional decision-maker, master of teaching strategies, and flexible, sensible developer of classroom social systems).

Von Mayer, Beth, and D. H. Reader. "Phase Progression in a Job Analysis Training Group," *Psychologia Africana*, XIII (1969), pp. 13-27.

The authors found that a phase progression model could not be applied to a job analysis training group which resembled a sensitivity training group.

Wolf, William C. "Educators' Conceptions of Contemporary Innovation in Teacher Training," *School and Society*, XCVII (October, 1969), pp. 378-380.

After reviewing data on teacher training programs, the author hypothesizes that no such entity as an innovative or imaginative school, college, or department of education exists in America; rather, many innovative and imaginative individuals function within conventional teacher training programs. His analysis of the data revealed the emergence of two rather clear-cut patterns of teacher education: (1) preservice pedagogical experiences are being turned into the realities of field practice much more deliberately than in the recent past; and (2) pace-setting local school units are assuming much more direct responsibility for the in-service education of professional employees.

York, Linda J. *Arrangements and Training for Effective Use of Educational R&D Information: A Literature Survey*. Berkeley, Calif.: Far West Laboratory for Educational Research and Development, December, 1968.

This survey found at present the most adequate training being provided school research personnel is in the area of evaluation techniques and research design skills. It also identified the skills in which the least training is being provided: (1) needs assessment, (2) long-range planning, and (3) systematic analysis of present conditions.

Zwiren, Abbie, and Susan Zielke. "Training Group Leaders in the 7-Step Technique," Journal of Emotional Education, IX (Summer, 1969), pp. 108-112.

The seven steps in a form of sensitivity training are discussed under the following headings: (1) introduction and warm-up, (2) world of emotions, (3) the mock problem, (4) analysis of the mock problem, (5) the general problem, (6) analysis of the general problem, and (7) the individual problem.

VI. SOURCES OF AND BARRIERS TO CHANGE

Allen, Dwight. "It's Easier to Move a Cemetery Than to Change a School," Music Educators Journal, LVII (September, 1970), pp. 29-32.

The author characterizes teaching as a profession that can't prepare itself for the twenty-first century in a society that is constantly changing.

Allen, James E. "The New Education: Promise and Performance." Paper presented at the Annual Convention of American Federation of Teachers, New Orleans, La., August, 1969.

It is the author's view that the past decade has witnessed a constructive revolution in education, a revolution which has been accompanied by all of the unfortunate trappings of turmoil, disruption, discomfort, and upheaval, but a revolution which has too often been spoken of in negative terms. The author emphasizes that many citizens have concluded that public schools are not doing their rightfully expected job.

Allen, James E. "Strengthening Educational Research and Development." Remarks given at the Conference on American Education, sponsored by the National Network of Regional Educational Laboratories, Washington, D. C., July, 1969.

While emphasizing the importance of research and development activities of educational change, the author mentions that thus far the efforts have not produced convincing results. To validate this point, he refers to a national survey of school practices and attitudes. The survey asked school administrators and their staffs to identify recent educational research and development results or products that have had or will have widespread influence on school practices throughout the nation. The survey found two-thirds of the respondents unable to identify even one such advance. The author concludes that much of what we have so laboriously learned about educational theory and practice has been underadvertised, poorly packaged, and thinly distributed.

Angle, Philip H. "Designing a Dynamic Curriculum," *Audio-Visual Instruction*, XV (January, 1970), pp. 36-38.
The likelihood that instructional systems will be altered sufficiently to reflect the existence of new techniques of using personnel and other resources differently is largely conjecture, unless the system is given an impetus to change by reference groups within or outside the system.

Anthony, Sister John. "The C's of Change," *NCEA Bulletin*, LXVI (August, 1969), pp. 81-84.
The author describes two types of lag between theory and practice, the cultural lag and the complex lag. The cultural lag exists between a specific invention and the achievement of a specific adjustment called for by that invention. In a complex lag, the time interval is between the emergence of a stated social need and the meeting of that need by the development of adequate adaptive complexes. She discusses creativity, courage, communication, and commitment as the basic ingredients of change.

Argyris, Chris. "The Incompleteness of Social-Psychological Theory--Examples from Small Group, Cognitive Consistency, and Attribution Research," *American Psychologist*, XXIV (October, 1969), pp. 893-908.
The author's major point is that in the social psychology of interpersonal relations the infrequent, deviant behavior may be the competent or "healthy" behavior.

Bacchus, M. K. "Education, Social Change, and Cultural Pluralism," *Sociology of Education*, XLII (Fall, 1969), pp. 368-385.
The author looks at changes which took place between two major ethnic groups in a "plural" society by examining their patterns of participation in the same formal educational institutions in that society over a period of forty years. He indicates that structural changes, which resulted in the increased acceptance of all groups in the dominant sector of the society, took place in the society, mainly in the political and economic institutions. With these changes, there developed an increasing similarity in the attitudes of these groups to education, judging from their patterns of participation in the various educational institutions.

Bell, Thomas O. "Designs for Educational Organization in Idaho," *University of Idaho College of Education Record*, VII (1969), pp. 3-16.
This report states that with some exceptions, the larger the enrollment of the school, the greater the tendency toward innovation. It was felt that larger schools may have the expertise or change agents needed to bring about the innovation

Boyan, Norman J. "The Political Realities of Educational R & D," Journal of Research and Development on Education, II (Summer, 1969), pp. 3-18.

The author believes that the legislative sphere of activity properly deserves recognition as the locus of the politics of educational research and development. The negotiations that prevail within the Executive Branch of government are recognized as the diplomatics of educational research and development.

Brickman, William W. "The Newer Cliches in Education," The Toronto Education Quarterly, VIII (1969), pp. 8-9.

The author believes that novelty for the sake of novelty is, all too often, the motivation for the introduction and usage of an educational expression and that a cliche is an aid to obfuscation and a convenient substitute for critical reflection and evaluation.

Burnett, Joe R. "Changing the Social Order: The Role of Schooling," Educational Theory, XIX (Fall, 1969), pp. 327-336.

The author presents six observations on the role of schooling in changing the social order:

1. For many decades, an idea system associated with educators changing the social order was developing, but there were no viable agents or vehicles to serve as the political force essential to objectifying the idea system.
2. The lack of agents and vehicles seems to have convinced some educators that the particular type of idea system was not feasible.
3. The conviction that it was not feasible seems gradually to have led to the notion that it is not desirable that educators function as one of the society's dominant power groups in directing social change.
4. At the very time the idea system is being neglected and/or is in bad repute, the agents and vehicles have come to the fore in the form of the two national teachers' organizations.
5. Because many of the problems today are so much like those of three or four decades ago, one can suspect that we will see a resurgence of interest in social foundations, progressivism, and social reconstruction.
6. It may well be that it is going to be professionally important for us to stress social philosophy of education much more, and this just at a time when the emphasis seems to be on high specialization and fewer general, philosophically-oriented courses for teacher trainees.

Bussie, Victor. "A National Agenda for American Education." Paper presented at the Conference on a National Agenda for American Education, Washington, D. C., July, 1969.

The author emphasizes that educational problems cannot be solved by simply adding more money. What is needed is the dedicated, determined unity of the type which made it possible for Apollo 11 to blast off from earth on its trip to the moon, with every assurance that its mission will be a success.

Campbell, Roald F. "Capital Investment for Research and Development." Paper presented to the Conference on a National Agenda for American Education, Washington, D. C., July, 1969. (ED 033 472)

The author maintains that money is being funneled into dissemination and application at the expense of research. Since the former two cannot long be effective without the latter, the author feels that there needs to be a balance in funding for the three areas.

Carnie, George M. "Curriculum Design, Staff Utilization and Instructional Strategies for those Isolated, Small Rural Schools that at the Present Time Cannot be Consolidated or Reorganized," University of Idaho College of Education Record, VIII (1968-1969), pp. 17-25.

The author emphasizes that small rural schools across the nation need help in planning and providing the educational program which is in keeping with the changing environment.

Carter, Launor, and Harry Silberman. "The Systems Approach: Technology and the School." Speech at Conference to Mark the Dedication of Ben D. Wood Hall, Educational Testing Service, Princeton, N. J., May, 1965.

The authors report that most changes of major significance are originated for the schools rather than by them and that lack of resources available to effect innovation is more a symptom than a cause of school immobility. They feel that to further accelerate the rate of innovation in the American school a greatly expanded effort at the national level is needed.

Chaffee, John, and Patricia Wagner. "Teachers DO Make a Difference," American Education, VI (May, 1970), pp. 23-25.

The authors cite research which concludes that the socio-economic background of a student, in and of itself, accounts for only 12 percent of differences in pupil achievement. School characteristics alone account for only 6 percent. The remaining 82 percent is due to some inseparable combination of these factors.

Chase, Francis S. "Educational Research and Development: Promises or Mirage?" Journal of Research and Development in Education, I (Summer, 1968), pp. 3-14.

The author argues that education has poor access to knowledge-producing and knowledge-applying resources. He describes five characteristics of the research environment that facilitate transfer of new scientific results to useful applications.

Coffin, Gregory C. "Educational Relevance - Environment, Teachers, and Curriculum," Education and Urban Society, I (August, 1969), pp. 375-381.

The author's major point is that the real challenge in education today is for all in education to learn another set of three R's, racism, responsiveness, and relevance.

Conant, Ralph, W., Sheldon Levy, and Ralph Lewis. "Mass Polarization: Negro and White Attitudes on the Pace of Integration," American Behavioral Scientist, XIII (November-December, 1969), pp. 247-263.

Based on a survey of white-black attitudes on racial integration taken in 1966-67, the authors conclude that black-white attitudes are growing farther apart rather than closer together.

Cruickshank, Donald R. "The Teacher Education Development Program and the Education Professions Development Act: A View from the Institutional Perspective," Journal of American Association of Colleges for Teacher Education, XXI (1969), pp. 149-154.

The author bleieves that the new and stimulating projects which have come out of the most recent legislation and from the United States Office of Education have caused more change or enabled more change to occur than anything else that has happened in the last twenty or thirty years.

Davis, John B. "Needed: A Dramatic Reorganization to Restore the Schools," The Maine Teacher, XXIX (1969), pp. 34-38.

The author emphasizes the need for displacing the marginal teacher and administrator.

Eaton, J. W. "Symbolic and Substantive Evaluative Research," Administrative Science Quarterly, IV (1962), pp. 421-442.

The author shows that resistance to evaluative research findings is a durable feature of treatment-oriented organizations.

Eberts, Paul R. "Rural Sociology's Response to Extension-Suggestions for Action-Oriented Theory," Rural Sociology, XXXIV (June, 1969), pp. 234-240.

It is the author's conviction that if good theory and good research can be developed, the organization of extension will take care of itself. He offers suggestions which are directed at organizing sociological theory for action. Five issues and suggestions to facilitate theory building are considered:

1. Clarification of which unit of analysis is being researched, and emphasis on research at macro- rather than micro-levels.
2. Reformulation of individuals' values so that they can be researched at macro-levels.
3. Development of theoretical schemes that more self-consiously interrelate more variables more precisely.
4. Research on the problems of social changes using diachronic data.
5. Delineation of manipulable variables from other types, and interrelating them all in the same causal networks so that rural sociological extension can become more relevant to important problems.

Edelson, Malorie. "Evaluation and Confrontation: Keys to Textbook Change," Educational Product Report, III (1969), pp. 6-11.

The author believes that the demand for fair and adequate representation of minorities in textbooks is an area in which American educators can act with force and effectiveness by performing objective, reliable and bold evaluations.

Edgar, William H. "A Pessimistic View," Journal of Public Management, LI (September, 1969), pp. 20-23.

If any significant change is to occur, large amounts of research and money must be poured into developing solutions to the physical and human problems of cities.

"ETS Active in Assessment, Accountability, Audit, and Performance Contract Evaluation," ETS Developments, XVIII (October, 1970), pp. 1-4.

Four generalizations are offered on the basis of the experience of the Educational Testing Service with projects dealing with assessment, accountability, auditing, and performance contract evaluation:

1. There is some danger that the attractiveness of the concepts will promote a faddishness attended by superficiality and eventual disillusionment.
2. Since each project is different, there are no patent formulas for assessment and evaluation, and design and analysis must be based on the objectives and special circumstances of each project.
3. There is little experience and fewer guidelines for

such new approaches as accountability, performance contract evaluation and auditing.

4. The crucial role of measurement in all such endeavors requires the early involvement of qualified specialists in planning as well as later stages of development and operation.

Frank, Jerome D. "Control of Conflict and the Sense of Community," International Understanding, VI (1968), pp. 5-10.

Conflict in moderation is seen as essential for the health and growth both of the individual and of the groups to which he belongs. The author believes that societies without conflict would be very boring, not to say stultifying.

Frye, Northrop. "The Ethics of Change: The Role of the University," The School Guidance Worker, (October, 1969), pp. 1-12.

The author discusses a conflict between two kinds of anxiety: (1) a conservative, or let's-be-careful-about-losing-what-we've-got, anxiety; and (2) a radical, let's-be-careful-and-clear-out-all-this-stuff-and-have-a-fresh-breeze-blow-through, anxiety.

Frymier, Jack R. "Teachers: Not Will, But Can They Change." Strategies for Educational Change Newsletter, II (November, 1968), pp. 1-4. (ED 024 648)

The author feels that teacher resistance to innovation can be reduced by refusing admission to different entry points to those who are resistant to innovation.

"The Future of Cities: Tremendous Change Ahead," Journal of Public Management, LI (September, 1969), pp. 9-11.

American cities will change tremendously between 1969 and 1975, but only with the requirement that a major effort be undertaken to deal with the following polarizations: authoritarianism vs. anarchy, law and order vs. freedom, right wing vs. left wing, military and police vs. civilians, Big Brother vs. privacy, desire for no taxes vs. acceptance that we get what we pay for, and lower middle class white vs. upper middle class white and the Negro.

Gallup, George. "The Public's Attitude Toward the Public Schools," Phi Delta Kappan, LII (October, 1970), pp. 99-112.

Part of a 1970 survey dealing with the public's attitude toward their schools is presented. A section is devoted to attitudes toward change and innovation.

Geis, George L. "Developing a Strategy for Innovation." Paper presented at a Symposium on the Associated Staff Training Program for the American Educational Research Association, Chicago, February, 1968. (ED 024 295)

Various reasons are given as to why innovations fail (usually because the innovation is dumped on the school with the attitude--"Here it is, use it"). The author feels that schools must be involved in the process of innovation.

Goodlad, John I. "Educational Change: A Strategy for Study and Action," National Elementary Principal, XLVIII (January, 1969), pp. 6-13.

The author offers eight propositions on the state of schools regarding change:

1. There is an enormous gap between our concept of what schooling could be and what it is.
2. A substantial number of principals and teachers want to know much more about the newer ideas and concepts and how to implement them.
3. It is assumed that if school personnel can listen and read, they will change their conceptual and performance behavior.
4. There are few comprehensive conceptual, simulated or real models of what redesigned schools might look like.
5. The norms of and expectancies for schooling are so built into the total structure that the prospect of redesigning any significant part of the whole is discouraging, if not frightening.
6. Upward mobility for individuals in the system depends not only on learning its nature but also on reinforcing the system.
7. Significant educational change can only result from a comprehensive attack on the whole.
8. We are not at all clear on how to go about effecting this comprehensive attack on the whole, in spite of our diversified experience with programs designed to bring about educational change.

Utilizing these propositions, the author describes the rationale for the League of Cooperating Schools.

Goodlad, John I. Innovations for the Elementary School. Melbourne, Fla.: Institute for Development of Educational Activities, Inc., 1968.

The view is that the structure of organized schooling resists new ideas. It attaches labels to them, and absorbs the form without the substance. The author discussed current and desired mechanisms for innovation in education.

Gould, Karolyn. "Why It's Been So Tough to Innovate in Education," Innovation (September, 1970), pp. 12-24.

The author feels that American private industry, which jumped eagerly into the educational technology market of the 1960's with individual teaching aids and found the market much smaller than anticipated, will fail in much the same way with their new system-wide approaches unless they take into consideration several features unique to the educational market. Among these features are:

1. Educational innovation implies novelty--some new material or technique merely superimposed upon the old, as opposed to an industrial innovation such as the transistor which caused entire industries to spring up or disappear.
2. Education has been preoccupied with measuring outcomes instead of teaching processes, which in industry would be equivalent to rejecting defective automobiles instead of identifying the defective manufacturing processes and working to eliminate them.
3. Innovation has been less than successful in education because of the miniscule research and development (R&D) budget.

Graham, George J. "Rousseau's Concept of Consensus," Political Science Quarterly, LXXXV (March, 1970), pp. 80-98.

The author argues that Rousseau's concept of consensus justifies the maintenance of the status quo.

Greenstein, Fred I. "The Case of the Reluctant Consultant: On Moving from What We Know to What We Ought to Do," The School Review, LXXVII (March, 1969), pp. 41-53.

The author emphasizes that educators, in failing to begin from an understanding of who participates in politics, who fails to participate, and why, are unable to pinpoint their targets and gear their efforts to the special requirements of the situation. Thus, educators proceed within a frame of reference which fails to take into detailed account the dynamics of the political behavior they are trying to change.

Grinberg, Leon. "New Ideas: Conflict and Evolution," International Journal of Psycho-Analysis, L (1969), pp. 517-528.

The author thinks that the capability to cope with uncertainties and half-truths without feeling compelled to undertake the irritating search for certainty helps the creative mind not only to produce new theories, but also to mould them flexibly and lastingly enough to avoid their premature saturation. He mentions that the conflicts between conservatives and innovators are not entirely due to ideological divergencies, but also to emotional situations, the consequences of which become evident at the individual, group and institutional levels.

Hein, George E. "The Impact of 'Stuff' in the Classroom," Educational Technology, IX (December, 1969), pp. 55-58.

The author contends that the new media and methodology are essentially no more able than the old to effect change and that second order methodological questions should not deter educators from the pursuit of educational goals.

Hilgard, Ernest R. "The Problem of R & D Within Behavioral Social Sciences," Journal of Research and Development in Education, II (Summer, 1969), pp. 37-48.

The author argues that behavioral and social scientists should, as a body, be doing work that is pertinent to social problems, and, as a body, should carry that work responsibly to the point of invention, innovation, and evaluation.

Hoban, Charles F., and Alaknanda Rege. "Value Structures of Researchers and Non-Researchers," AV Communication Review, XVII (Winter, 1969), pp. 410-427.

The authors investigated the hypothesis that researchers and non-researchers in the field of instructional technology differ in value structure. They found significant differences in the distribution of value ranks between researchers and non-researchers for only two values: enlightenment and affection. Researchers ranked enlightenment consistently higher in priority than did non-researchers, and relatively more non-researchers consistently ranked affection higher than did researchers.

Hochstein, Robert. "The Payoff from Educational R&D," Phi Delta Kappan, LII (February, 1971), pp. 376-378.

The author maintains that, as a result of the National Center for Educational Research and Development's (NCERD) support for research and development (R&D) activities and its establishment of educational R&D centers and laboratories, innovation has become an integral part of the American educational scene. He cites as examples Patterns in Arithmetic (PIA), developed by the Research and Development Center for Cognitive Learning at the University of Wisconsin, and Individually Prescribed Instruction, developed by the Learning Research and Development Center at the University of Pittsburgh and Research for Better Schools, Inc. of Philadelphia.

Horowitz, Irwin A., and William E. Gumenik. "Effects of the Volunteer Subject, Choice, and Fear Arousal on Attitude Change," Journal of Experimental Social Psychology, VI (1970), pp. 293-303.

The authors found that opportunity for choice had a positive effect on attitude change.

Inkeles, Alex. "Making Men Modern: On the Causes and Consequences of Individual Change in Six Developing Countries," American Journal of Sociology, LXXV (September, 1969), pp. 208-225.

The author describes a theoretical conception of the modern man. He cites evidence which demonstrates that education is the most important influence moving men away from traditionalism toward modernity in developing countries.

Jacoby, George W., and Roger D. Bonham. "How a Basic Data Collection System Stimulates Personnel and Programs," Mental Retardation, VII (December, 1969), pp. 47-50.

The authors believe that data collection and analysis systems challenge traditional concepts and create constructive confrontations.

Johnson, David W. "Influence on Teachers' Acceptance of Change," Elementary School Journal, LXX (December, 1969), pp. 143-153.

Three common errors hamper attempts to change teachers' behavior: (1) concentrating only on the individuals involved, while ignoring the interpersonal relationships, and the norms and values of the organization of which the individuals are a part; (2) concentrating only on the structure of the school, while ignoring the attitudes, values and behavior of the individuals in the school; and (3) assuming that telling individuals that change is desirable will result in change. The author feels that teachers' acceptance of change is limited and inhibited by aspects of the national educational system and the organizational characteristics of the school, by the lack of clear criteria for evaluating teaching, and by certain aspects of the teacher role. Even in the two areas where teachers are perhaps free to innovate, the way they present curriculum content and relate to pupils, their personality and lack of conceptual and inquiry skills limit their motivation and ability to reexamine, evaluate, and change their behavior.

Johnson, Homer H., and John A. Scileppi. "Effects of Ego-Involvement Conditions on Attitude Change to High and Low Credibility Communicators," Journal of Personality and Social Psychology, XIII (1969), pp. 31-36.

The results of this study indicate that greater attitude change occurs in low-ego-involvement-high-source-credibility conditions than in three other combinations of source credibility and ego involvement. The authors believe that the results support the theory that source credibility is a "set" influencing communication acceptance-rejection primarily under low-ego-involvement conditions.

Johnson, William D., and Walter J. Mars. "Problems for the Innovator of Micro-Teaching," Educational Television, II (February, 1970), pp. 16-22.

The authors discuss two general categories of problems which face the innovator of micro-teaching: (1) attitudinal problems, and (2) management problems.

Law, Gordon L. "Research and Implementation in Vocational Education." Washington, D. C.: American Vocational Education Association, March, 1969. (ED 029 145)

The author states that research is important for vocational education, and makes some recommendations for areas which need researching.

Lazerson, Marvin. "Social Reform and Early-Childhood Education: Some Historical Perspectives," Urban Education, V (April, 1970), pp. 84-102.

The author explains his pessimism about the possibilities of substantive social change through pre-schooling.

Leeper, Robert R. "Most of the Change," Educational Leadership, XXV (January, 1968), pp. 283-285.

The author cautions that educational innovations will be self-deflating and futile if their advocates fail to take into account the feelings, motivations, values, and needs of the people concerned.

Lessinger, Leon M. "Looking at Educational Change From the Local Level." Speech delivered at the President's National Advisory Council Conference on Innovation, Washington, D. C., September, 1968.

The efforts to bring about change seem to lack (1) a pervasive and sustaining philosophy of change as a constant condition, (2) a system of sustained logistical support for encouraging and reinforcing the desire and willingness to change, and (3) a well-developed concept of management.

Lyons, Paul R. "What is Institutional Research." Gainesville: The Florida Community Junior College Interinstitutional Research Council, Institute of Higher Education, College of Education, University of Flordia, February, 1969. (ED 027 872)

Institutional research is defined as that which is directed toward providing data which are useful and necessary in the making of intelligent decisions and/or for the successful maintenance, operation and/or improvement of a given collegiate institution. The author feels that institutional research is necessary because of the unique problems facing colleges

Marcus, Edward E. "The Basis of Effective Human Communication," Mayor and Manager, XII (1969), pp. 8-10.

The author believes that the effectiveness of communication tends to be directly proportional to the degree to which both the sender and the receiver regard and treat each other as "human," in the sociocultural context of the event.

Marland, Sidney P. "A Customer Counsels the Testers," Proceedings of the 1968 Invitational Conference on Testing Problems. Princeton, N.J.: Educational Testing Service, 1968.

The author believes that testing is under attack, because it is a part of an Establishment that is under attack. He attempts to enumerate, discuss and respond to the criticisms that are being leveled at standardized tests. These criticisms are that too much testing is being done, that tests often do not test relevant or well-defined characteristics, that results are manipulated by teachers and misinterpreted by administrators, that they are aimed only at academically-minded students and that they impose norms that are not in agreement with the goals of the tested population.

Mayhew, Lewis B. Innovation in Collegiate Instruction: Strategies for Change. Research Monograph #13. Atlanta, Ga.: Southern Regional Education Board, December, 1969. (ED 022 415)

The following barriers to change in higher education are discussed: (1) inertia, (2) lack of rewards for good teaching, (3) lack of knowledge about teaching, (4) conflict between teaching and research, (5) lack of competent, trained personnel in institutional research, (6) lack of communication, (7) variety of types of institutions, and (8) academic conscience (imbued with Calvinism).

McGarvey, Patrick J. "Grim Truth: The Federal Government Doesn't Know Where It's Going in R&D," Government Executive, I (November, 1969), pp. 49-55.

The author's main points are as follows:

1. Prospects for a truly national approach to research and development (R&D) seem grim.
2. The Nixon team is busy on the problem, but it lacks central guidance.
3. The federal government is spending $17 billion annually on R&D. The Department of Defense and the National Aeronautics Space Administration get 75 percent of it.
4. Trends in R&D investment point to more money being spent on domestic problems, but it will be slow in coming.
5. Decisions on R&D funding today result more from "pressure and influence" than a rational ordering of priorities.

6. The coming political generation of young is likely to influence federal R&D investments in the next decade.
7. The professional R&D community is not really prepared to tackle future domestic R&D problems.
8. Leadership is what is needed most.

McKelvey, Troy V. "Urban School Administration - Some Problems and Futures," Urban School Administration, Troy V. McKelvey and Austin D. Swanson (eds.). Beverly Hills, Calif.: Sage Publications, Inc., 1969.

The author feels that the accelerating urbanization of America has caused most of the strains that city schools have been experiencing. This caused an overload on the structure of the city schools designed for prior conditions. Instead of changing to meet the new demands, the schools have deteriorated and the roles of the components of the school system have been restricted by the circumstances of over-crowded and old-fashioned cities unable to serve their populations properly. The author calls for new kinds of teachers, principals and administrators.

McLure, William P. "Major Issues in School Finance," Educational Administration Quarterly, V (Autumn, 1969), pp. 2-14.

The author interprets the contemporary issues in school finance as functions of three phenomena: (1) educational needs of individuals and society, (2) governance, and (3) ecological characteristics of the population. He emphasizes the logical order of issues and the necessity of the total complex of them. The most crucial issues are classified under the following topics:

1. Adequate support to reform and to extend educational opportunity to achieve the goal of the best possible development of every individual.
2. Improvements in the processes and structural characteristics of government upon which effective educational programs depend: tax systems, school district organization, regional units, state educational agencies, and intergovernmental relations.
3. Simplification of state finance plans for distribution of funds to local distircts, taking into account the variations of needs of the big cities, the very sparse areas, and other communities.
4. Resolution of the problems relating to the non-public schools.
5. Re-evaluation of the nature of inputs of resources-staff, facilities, and material-needed for the schools of the future.
6. Expansion of knowledge about the results or outputs of education.

"Measuring Progress in Education," Appalachian Advance, III (1969), pp. 6-9.

The author argues that if the national assessment program is as effective as many believe it will be, the public, for the first time, will have a tangible way to determine the progress of education.

Miller, Peggy L. "Innovation and Change in Education," Educational Leadership, XXVII (January, 1970), pp. 339-340.

The author reports on a study of ESEA Title III projects in Michigan which reveals some interesting data about the educational change process. The facilitating factors and human obstacles to change are stressed.

Miller, Richard I. "Directions and Processes of Educational Change in Higher Education." Paper presented to the Administration Faculties of Southwest Minnesota State College and St. Benedict's College, (n.p.), September, 1968. (ED 031 996)

Four of several major trends in higher education are discussed: (1) the accentuated search for ways of coping with the knowledge explosion; (2) the continued deterioration in liberal arts education vis-a-vis the scientific area; (3) the acceleration of student unrest; and (4) the acceleration of faculty organization.

Molotch, Harvey. "Racial Change in a Stable Community," American Journal of Sociology, LXXV (September, 1969), pp. 226-238.

A Chicago community experiencing racial transition is compared with an all-white control area to test the common assumption that transition is necessarily accompanied by a "flight" of whites, with a consequent abnormally high rate of property turnover (i.e., "instability"). It is found, through an inspection of property turnover records and by comparison of numbers of "For Sale" signs in the two areas, that the transition community shows no signs of instability. The assumption of a necessary link between transition and instability is thus rejected; implications for the goal of residential racial integration are discussed.

Murray, Frank B. "Credibility of Information for Educational Innovation," The Journal of Educational Research, LXIV (September, 1970), pp. 17-20.

In investigating an aspect of the apparent independence of educational innovation and educational research, the author discovered that teachers regarded standardized test research results as much less important than the college professors who regarded it as most important. Both the teachers and the professors found their own colleagues and their own activities more important and credible. The author concludes that researchers and educators use different criteria in evaluating a course of action.

Murray, L. "Trade Unions and Technical Change," Advancement of Science, XXV (March, 1969), pp. 326-334.

The author reports that trade unions, reflecting the habits and attitudes of working men, are not typically risk takers, and question or even resist innovations which disrupt known and accepted practice unless they are accompanied by adequate guarantees of protection against the adversities of change. Trade unions believe that innovation is the function of entrepreneurs, not of themselves. The demands which unions present to management may on occasion promote change in the form of explicit counter demands or of the initiation of technical or organizational changes to make it possible to meet those demands or to deal with their consequences, but even in these respects the contribution of trade unions to technical change is accidental.

Oppenheimer, Martin. "Successful and Unsuccessful Change in Two Educational Settings," Journal of General Education, XXII (October, 1970), pp. 175-185.

The author reports on two attempts to introduce the general techniques of "student-centered teaching" into educational settings with innovational orientation. One attempt was successful, the other unsuccessful. The variations in the outcomes of the two situations was attributed to the differences in the latent agendas. It is felt that the closer the latent agenda comes to the stated purpose, the more likely it will be that an organization can in fact carry through its stated goals.

Primack, Robert. "Knuckleheads and Neighborhoods," Phi Delta Kappan, LII (February, 1971), pp. 363-365.

The author criticizes the concept of the neighborhood school as demonstrating provincialism and parochialism, and as having serious defects in its philosophy, methodology, and performance.

Rajpal, Puran L. "Relationship Between Expenditures and Quality Characteristics of Education in Public Schools," The Journal of Educational Research, LXIII (October, 1969), pp. 57-59.

The author examines the relationship between selected measures of educational quality and expenditure in public secondary schools of Iowa with the influence of school district size held constant. He concludes that higher expenditure per pupil generally results in higher educational quality.

Roberts, Dennis L. "Transforming Urban Life and Urban Education," Educational Technology, X (October, 1970), p. 9-10.

The author argues that the manifold problems of urban education will not be solved by so-called educators.

Scott, James C. "Corruption, Machine Politics, and Political Change," *American Political Science Review*, LXIII (December, 1969), pp. 1142-1158.

The author believes that machine politics, thriving in periods of rapid social change, represents a conservative response to its dynamic environment. It is conservative in at least four respects: (1) it represents an alternative to violence in managing conflict; (2) it increases the legitimacy of the regime for transitional populations; (3) it emphasizes short-run gains at the expense of encouraging long-run transformations; and (4) it avoids class issues and fosters inter-class collaboration.

Segal, Bernard E. "Dissatisfaction And Desire For Change Among Chilean Hospital Workers," *American Journal of Sociology*, LXXV (November, 1969), pp. 375-388.

In comparing social attitudes of Chilean professional and nonprofessional hospital workers, the author found professionals to be more modernistic, more satisfied, more likely to endorse broad and general programs of social change, but a good deal less likely to support militant union intervention for accomplishing short-term change than nonprofessionals. Among the nonprofessionals, it was found that those coming from families that were more nearly middle class than working class were the more dissatisfied and radical.

Shibles, Mark. "Societal Forces And The Public Schools In The 1970's." Paper presented at the Annual Meeting of the American Educational Research Association, Minneapolis, March, 1970.

The author portrays the following state of affairs with regard to schools in the seventies:

1. Increased conflict based on inter-governmental disputes, rural-urban differences and a greater fragmentation of influential educational pressure groups can be anticipated.
2. Federal influence through legislation and litigation will most probably be directed at seeking solutions through education to problems of poverty, racism and environmental conditions.
3. Industry may be expected to shift increasingly more of its resources away from research and development activities designed to produce specific products and offering special services to school systems.
4. Development rather than research will be emphasized, although the lack of well developed mechanisms for mediating knowledge through the research, and development, diffusion and adoption chain will continue to inhibit the impact of federally sponsored projects upon school practice.

5. Quantitative models will be used more, although there will be improper adaptation of models developed elsewhere to educational settings, an overemphasis on the gathering of quantitative data through crude testing devices and overemphasis on economic efficiency.
6. There will be more pressure toward rational dissent utilizing factual information and reasoned analysis of data in educational policy making.
7. Teacher organizations will demand more of a voice in policy matters, but they will remain conservative with respect to demands of forces external to the school system.
8. There will be strong pressure for opening up schools as political systems.

The author concludes that the total impact of the forces can be expected to produce a greater performance orientation in the schools.

Singer, Harry. "Research That Should Have Made a Difference," Elementary English, XLVII (January, 1970), pp. 27-34.

The author believes that in the future, translation of basic research findings into classroom practice is more likely to occur and in a more systematic way.

Spencer, Thomas E. "The Age Of Over-Save: Some Remarks On The Evangelical School," Educational Theory, XIX (Fall, 1969), pp. 404-423.

It is the author's view that the more widely informed a person is, the more likely he is to reject the established values.

Telfer, Richard G. "Dynamics of Change," The Clearing House, XLI (November, 1966), pp. 131-35.

Nine barriers to curriculum improvement are identified and discussed: (1) lack of time, (2) lack of effective means of communication, (3) lack of agreement of what is to be done, (4) lack of money to do the necessary tasks, (5) staff turnover, (6) poor teacher preparation in science and mathematics, (7) lack of teacher interest and cooperation, (8) lack of top level administrative support, and (9) teacher apathy.

Van Til, William. "Education and the Resolution of Conflict," The New Era in Home and School, L (September-October, 1969), pp. 192-195.

The author defines conflict as a situation in which two or more human beings desire goals which they perceive as being attainable by one or the other, but not by both; a situation in which each party wishes to occupy a position that is incompatible with the wishes of the other. He states that the standard educational position regards conflict as undesirable in itself. From the standard educational point of view, the thing to do about conflict is to avoid allowing it to ever develop or, should it develop, to bring it to an end as swiftly as possible, sometimes even by the very violence which is deplored as a necessary concomitant of conflict. On the other hand, the sociologically-influenced viewpoint advocates not the aversion or the speedy repression of conflict but instead the acceptance of conflict for incorporation into the educational process, on the assumption that conflict is necessary for change and progress. The author criticizes the traditional educational viewpoint because it avoids and evades potential conflicts to which intelligence should be applied and shortcuts or eliminates existent conflicts to which intelligence should be applied. He criticizes the sociologically-influenced educational viewpoint because, while it provides groups of educators the opportunity to deal with conflicts, it provides no ground rules under which the conflicts are to be resolved.

Watson, Bernard C. "Urban Education: Its Challenge to the Research Community," Urban Education, V (July, 1970), pp. 109-127.

This paper reflects the frustration of people today who care about education and asks that personnel, funds, and attention be focused on school district research efforts, so that research aims and educational realities might be brought into a fruitful relationship with one another.

Watson, Goodwin. "Reward Systems for Innovation." Paper presented at the Annual Conference of the American Association for Higher Education, Chicago, March, 1968. (ED 028 719)

The author states that for innovation to occur in colleges, resistance must be lowered. He feels that research and development centers will eventually be set up on campuses in much the same way that counseling centers evolved.

Wiley, Russell W. "Blocks To Change," Educational Leadership, XXVII (January, 1970), pp. 351-353.

The author discusses separatism, anti-intellectualism, and extremism as three major blocks to change which impede the progress of education in America. He suggests four guidelines for action which may remedy the situation.

Wilkening, Eugene A., and Sylvia Guerrero. "Consensus in Aspirations for Farm Improvement and Adoption of Farm Practices," Rural Sociology, XXXIV (June, 1969), pp. 182-196.

The authors test the combined effect of farm husbands' and wives' aspirations for farm improvement on the adoption of different types of improved farm practices. The sample involved 500 Wisconsin farm couples. The results show that consensus in aspirations between husband and wife is associated with higher adoption than when only one spouse has high aspirations. This association holds for the adoption of most practices when income is controlled. The hypothesis that practice adoption is higher when the husband has high and the wife has low aspirations for farm improvement than when the opposite is true is not supported.

Williams, Edgar G. "Changing Systems and Behavior," Business Horizons, XII (August, 1969), pp. 53-58.

The author believes that creating and innovating, the hand-maidens of change and progress, do not always contribute to stable modifications of existing systems or to the smooth introduction of newly designed ones. He explains that the manager, as a creator of change, must understand planned change, orderly change, as his immediate goal. Four general reasons for designing orderly change are presented: (1) to improve the means for satisfying somebody's economic wants, (2) to increase profitability, (3) to promote human works for human beings, and (4) to contribute to individual and social well-being. Barriers to change, from the viewpoint of an individual, are classified as perceptual, emotional or cultural in nature.

Williams, James D. "No Drastic Changes Before 1975," Journal of Public Management, LI (September, 1969), pp. 12-15.

The author believes that no drastic changes are anticipated before 1975 due to the resistance of established institutions and established economic patterns within the country.

Winn, Ira J. "Educational Planning and 'The System:' Myth and Reality," Comparative Education Review, XIII (October, 1969), pp. 343-350.

The author posits that the root of the failure to effect educational change in traditional systems does not lie largely in the inherently conservative nature of school systems. Systems have certain conservative tendencies, but they need not be a conservative force. The real cause of failure is the fixation on quantitative approaches to planning and the false hopes about manipulating educational system exteriors. The author offers another perspective on assessing progress toward reform and suggests a number of steps basic to educational reform as key areas of concentration for planners. He believes that the traditional and self-defeating approach to educational change dominates the current planning scene. This approach is characterized by three mutually reinforcing errors:

1. Gathering quantitative data consumes most of the effort and interest of the planners and becomes virtually the goal of the operation.
2. Should the plan begin to be used, the planners hastily withdraw to their planning towers, sometimes located in another country, leaving the work of implementation to others, who either do not know or do not understand the plan or who are technically incapable of efficiently carrying it through.
3. The fixation on paper planning (and the status it brings) is matched by a failure of attention to teachers and administrator training and an absence of emphasis on the development of professional teacher organizations and good school-community relations for implementing scoial change.

Wolf, W. C. "Knowledge Generation," Educational Researcher, XXI (January, 1970), pp. 1-2.

The author reports on five interim observations in a study on research utilization. The basic view is that research utilization is a little valued and utilized art.

Yardley, Alice. "Innovation in Primary Education," Childhood Education, XLVII (September, 1970), pp. 3-5.

The author believes that a massive change has occurred in regard to education over the last decade. The change is that parental involvement and the wide-reaching effects of mass media have revolutionized the attitude of those outside the profession with the result that the man in the street perceives himself as something of an authority on education. The author questions whether pressures caused by this change are promoting ill-founded action on the part of schools.

SECTION THREE
ORGANIZING FOR CHANGE

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I. ORGANIZATIONAL AND INSTITUTIONAL NORMS

Alutto, Joseph A., and James A. Belasco. "Decisional Participation Among Teaching Personnel and Perceptions of Administrative Influence." Paper prepared for the Annual Meeting of the American Educational Research Association, Minneapolis, March, 1970.

The authors' research shows that a "fixed pie" notion of influence apparently does exist among teaching personnel, particularly when considering teacher conceptions of optional levels of administrative influence. As teachers increase their levels of actual participation in decision-making processes, they apparently prefer to see reductions in the relative organizational influence of principals and superintendents. Moreover, increases in current decisional participation are also associated with reductions in the perceived influence of school district superintendents, but unrelated to the perceived influence of building principals. The authors suggest that the resistance of superintendents to increased teacher participation in school system decision-making may be based on a recognition that such participation would be interpreted by teachers as a reduction in the relative influence of administrative officials.

Appleberry, James B., and Wayne K. Hoy. "The Pupil Control Ideology of Professional Personnel in 'Open' and 'Closed' Elementary Schools," Educational Administration Quarterly, V (Autumn, 1969), pp. 74-85.

The authors report their research on the relationship between the pupil control ideology of educators and the "openness" of the organizational climates of elementary schools.

Bidwell, Charles E. "The School as a Formal Organization." Handbook of Organizations. James G. March (ed.). Chicago: Rand McNally and Company, 1965.

Maintaining the routinization of activities within the classroom and building units of the school system is seen as the principal task of school administrations. Three ways of achieving this sort of control are noted: (1) the interweaving of staff orientations with professional norms and local school-system policies; (2) the establishment of standards of student accomplishment prerequisite to movement from grade to grade, which could also be utilized to measure teacher performance; and (3) the bureaucratization of school and classroom activities by rules of procedure which restrict the discretionary autonomy of classroom teachers or school staffs. Five aspects of school systems as organizations are singled out for analysis: (1) the recruitment nature of the student-client role, (2) the professionalization of school staffs, (3) the essential variability of procedures, (4) the requirements for rationalization of procedures, and (5) the controlling powers of local constituencies and higher governmental agencies.

Brager, George. "Commitment and Conflict in a Normative Organization," American Sociological Review, XXXIV (August, 1969), pp. 482-491. The author's view is that the effects of external conflict upon complex organizations have been largely ignored. While empirical evidence of responses to conflict derives largely from small group research, theorists have been interested in large-scale systems, such as nation-states. The author's analysis is that an organization facing a challenge to its value base and a threat to its survival may defend itself in two distinctly different ways: (1) to defend the organization's values, or (2) to focus upon survival to the exclusion (if necessary) of values. Strategy may move fitfully from one of these considerations to the other and ultimately end somewhere between the two polar extremes. Nevertheless, the threat of organizational extinction will inevitably turn the focus sharply in the direction of organizational maintenance, and some compromise on values is often deemed a requirement in developing a defense against outside attack.

Brumbaugh, Robert B. "Hierarchial Role Immediacy and Superordinate Control Orientation: Notes Toward a Theory," The Journal of Educational Administration, VII (October, 1969), pp. 158-171. The author stresses that the economy necessarily associated with organizational goal attainment in schools and the resulting expediency for an adequate flow of organizational authority may operate to induce a lack of organizational recognition of certain of the individual's vital interpersonal needs. He attempts to explain why and how people come to perceive certain other people as they do within the context of the school as an organization.

Charters, W. W. "Stability and Change in the Communication Structure of School Faculties," Educational Administration Quarterly, V (Autumn, 1969), pp. 15-38. Using data from several of his communication studies, the author seeks to explain the strong persistence in patterns of staff contact in a high school between the spring of one academic year and the fall of the next, despite a 50% turnover of personnel in the interim. He concludes that the stability of the communication structure depends to an important extent upon the stability of the scheme for dividing the school's labor and upon the constancy of the physical arrangement of work stations.

Dissent and Disruption in the Schools: A Handbook for School Administrators. Melbourne, Fla.: Institute for Development of Educational Activities, Inc., 1969.

The contents of this handbook consists of what practicing educators have proposed and implemented in dealing with student dissension. Only practical recommendations, as opposed to the philosophical aspects of the larger social problems, are incorporated, due to the proliferation of such problems.

Haught, James M. "Games Schoolmen Play." Paper presented to the Annual Meeting of the American Educational Research Association, New York, February, 1971.

The author attempts to clarify the decision-making process of the Central Office Staff (COS) by describing its organizational structure in terms of "games" played by the COS. Two of the games mentioned are "Stacking the Deck," which involves hiring practices, and "Lining Up Your Ducks," which involves influencing Board of Education decisions.

Helsel, Ray A. "Value Orientation and Pupil Control Ideology of Public School Educators," Educational Administration Quarterly, VII (Winter, 1971), pp. 24-33.

A study was conducted to determine the relation between an individual's value orientation and his outlook on pupil control ideology. It was hypothesized that individuals who held more traditional values would tend to support a relatively custodial pupil control ideology; and, conversely, that those who were more emergent in value orientation would be more humanistic in their control ideology. Sub-hypotheses specified the general hypothesis to various organizational positions within schools. The major hypothesis was empirically supported for all positional levels.

Hone, Brian W. "Research into Education: A Headmaster's View," Educational Administration, VII (May, 1969), pp. 66-77.

The author, a headmaster, states his belief in the individual school as the vital organism, as the unit of education, and in the need for greater flexibility in the staffing of our schools so that practicing teachers may be free to take part in educational research. The researchers are asked whether they can find solutions to a number of problems: How do the State systems solve the problem of too great mobility of staff while maintaining equality of opportunity? What is the optimum size of a school and what is the optimum age range for a secondary school? Is there value in the boy's identifying himself with his school? What is a good school, and what is a well-disciplined school? The researchers are asked for more standardized achievement tests, for more work on the development of reading habits and skills in schools, for further curriculum research, for help in measuring 'readiness,' and for insights into motivation and classroom interaction.

Hoy, Wayne K. "Pupil Control Ideology and Organizational Socialization: A Further Examination of the Influence of Experience on the Beginning Teacher," The School Review, LXXVII (September-December, 1969), pp. 257-265.

The primary reference employed by the author is to view the schools as social functions. This perspective calls attention to the structure of the social relations in the school as well as the norms, values, and other orientations shared by school personnel. The author sees pupil control as a central feature of the organizational life of schools and focuses on the socialization of teachers with regard to pupil control ideology. It is hypothesized that as teachers are absorbed into the teacher subculture their pupil control ideology becomes more custodial and less humanistic.

Kunz, Phillip R. "Sponsorship and Organizational Stability: Boy Scout Troops," The American Journal of Sociology, LXXIV (May, 1969), pp. 666-675.

Sponsorship is conceptualized as a special case of interorganizational relations in which the organization being sponsored utilizes other organizations to implement its own program at the grass-roots level. A national probability sample of the Boy Scout troops is examined, and it is determined that the type of sponsor has little effect on the activities of the scout troop. The type of sponsor, however, does affect the troop in that sponsors tend to have a very different turnover rate. While it is commonly believed that the sponsors of scout troops would be pluralistic in nature, the evidence indicates that the selection and retention of sponsors becomes a very selective process.

McDill, Edward L., Leo C. Rigsby, and Edmund D. Meyers. "Educational Climates of High Schools: Their Effects and Sources," The American Journal of Sociology, LXXIV (May, 1969), pp. 567-586.

Through contextual analysis, the authors demonstrate that (1) a number of dimensions of the educational climates of schools have moderate effects on the mathematics achievement and college plans of students, with relevant individual attributes controlled; (2) several indicators of "intellectual" or "cultural" facilities of the community and measures of school curriculum and facilities do not qualify as sources of variations in climate effects; and (3) the degree of "parental involvement in and commitment to the school" is the one contextual variable which is a source of climate effects. The educational implications of the results are discussed.

Meyer, John W. "The Charter: Conditions of Diffuse Socialization in Schools." Stanford, Calif.: Stanford Center for Research and Development in Teaching, School of Education, Stanford University, May, 1970.

The effects of a school on diffuse attributes of students such as their values are seen as produced by the wider social definition of the products of the school--here called its charter. Schools or systems of schools which are chartered to confer major status gains and entry into diffusely defined elites are seen as more likely to have broad effects on their students.

"Resolutions Committee Shapes Statement on Issues," The School Administrator, (November, 1970), pp. 1-16.

It is felt that social systems like education lack formal mechanisms and procedures necessary to use feedback data for modification, change and improvement.

Saleh, S. D., and John Hyde. "Intrinsic vs. Extrinsic Orientation and Job Satisfaction," Occupational Psychology, XLIII (1969), pp. 47-53.

The authors investigated the hypothesis that employees who have intrinsic job motivation show higher levels of general satisfaction than employees who have extrinsic job motivation.

Schmuck, Richard A., Philip J. Runkel, and Daniel Langmeyer. "Improving Organizational Problem Solving in a School Faculty," Journal of Applied Behavioral Science, V (October-November-December, 1969), pp. 455-482.

The authors describe how they attempted to improve the capability of a school for organizational problem solving. They invited the faculty to state the frustrations which were encountered in the school and to practice a sequence of problem-solving steps to reduce these frustrations. This activity facilitated changes in organizational norms by requiring staff members to behave in new ways in the actual workshop where others could observe the new behaviors and see that their colleagues actually accepted the new patterns of behavior in the setting of the school. It also led to reduced frustrations and to the satisfaction of knowing that others valued the contribution one had made to outcomes highly desired by the faculty.

Swift, David W. "Ideology and Control in Custodial Institutions: The Public Schools," Sociological Focus on Education, III (1969), pp. 78-95.

The author's thesis is that a progressive ideology, whatever its consequences for the individual might be, makes things easier for an organization by alleviating problems of control. After a brief discussion of prisons, the author focuses on public schools, suggesting seven ways in which progressive methods help to keep students under control.

Wallen, John L. Charting the Decision-Making Structure of an Organization. Appendix V. Portland, Oreg.: Northwest Regional Educational Laboratory, October, 1968. (ED 026 327)

The author makes the point that the "chain of command" in an organization is too often a restriction of communication within the organization.

Weisbord, Marvin R. "Now, Focus on High School Unrest," Think, XXXV (September-October, 1969), pp. 3-7.

The author believes that one promising direction for dealing with the problems of educational change lies in the application of behavioral research, which until recently was the province of university behavioral scientists and motivation-conscious businessmen. He describes the efforts of several schools which are working with knowledgeable psychologists and are attempting to reverse the school norms of the past 100 years. These efforts are showing that it is possible to use conflict, which is inevitable, as a base for learning and to teach the skills of group interaction as well as of personal achievement. These efforts operate from a four-step learning theory: (1) you experience something; (2) you describe what it means; (3) you discover how what you have learned applies to your problem; and (4) you put the new understanding into practice.

Willower, Donald J. "Educational Change and Functional Equivalents," Education and Urban Society, II (August, 1970), pp. 385-402.

The author contends that schools display an array of structures that are functional for the organization and/or its adult personnel but dysfunctional or neutral for pupils. This situation is viewed as a barrier to change. It is argued that new structures should be designed to be consonant with desired ends for students and also to perform functions protective of the organization and its personnel, hopefully mitigating a major source of resistance to innovation.

Willower, Donald J., Terry L. Eidell, and Wayne K. Hoy. The School and Pupil Control Ideology. University Park, Pa.: The Administrative Committee on Research, Pennsylvania State University, 1967.

The authors tested a number of hypotheses concerning the pupil control ideology of public school professional personnel. The following hypotheses were confirmed: teachers were more custodial in pupil control ideology than were principals or counselors; elementary teachers and principals were less custodial in pupil control ideology than were their counterparts at the secondary school level; teachers with more than five years' experience in the classroom were more custodial than were

teachers with five years' or less experience; and closed-minded teachers and principals were more custodial than were open minded teachers and principals. The authors determined that the prototypic closed minded educator was the older, more experienced, male secondary school teacher; the prototypic open-minded educator was the well educated, male principal between 30 and 40 years of age. The prototypic custodial educator was the older, more experienced, male secondary school teacher; the prototypic humanistic educator was the somewhat younger elementary principal who had completed graduate work beyond the M.A. degree.

Zijderveld, Anton C. "Rationality and Irrationality in Pluralistic Society," Social Research, XXXVII (March, 1970), pp. 23-47.

The author argues that despite the growing rationalization of industrial and bureaucratic society, the modern individual has become increasingly irrational by relying on subjective emotions in his search for reality, meaning and freedom. He believes that pluralistic society has grown into a reality which is detached from human experience. Three implications of the severing of the "organic" bonds between man and his society are pointed out:

1. The social institutions will continue their own "life" and display an ever stronger tendency to become goals in themselves.
2. Since institutions are detached from human experience and are no longer able to function as channels and stimuli of human emotions, the individual is thrown back on his own subjectivity where, however, major directives and incentives are absent.
3. The separation of man and society has led to an increased rationality in man's mental attitude toward his institutional environment.

As a response to the situation, the author recommends intellectual asceticism which refuses to comply uncritically with abstract society and to engage in "gnostic" intoxications and which sees society as a means to realize human existence.

II. ORGANIZATIONAL GOALS

Action Guide: How to Set and Achieve Goals. Dynamic Management Series #177. Waterford, Conn.: Bureau of Business Practice. 1969.

This book states that traditional management approaches do not confront the company's most basic problem and define its most basic goal, growth through the development of individual talent. Management by objectives is viewed as an innovative system which can meet these concerns. The process of management by objectives is described.

Allen, James E. "An Interview with James Allen," *Harvard Educational Review*, XL (November, 1970), pp. 533-546.

In responding to a series of questions, the author, a former U.S. Commissioner of Education, states that the Office of Education ought to be concerned with three things as general goals: (1) to take the lead in developing a nation-wide strategy for maintaining a continuing process of improvement and relevance in American education, (2) to accelerate the process of eliminating failures in the educational system, and (3) to ensure a more effective distribution of governmental resources in relation to educational need.

Atkins, Thurston A. "It's Time For A Change - Or Is It?" *National Elementary Principal*, XLVIII (February, 1969), pp. 46-48.

The author emphasizes that provision should be made for continual assessment of the effectiveness of the school in relation to the functions it is expected to serve and that such a procedure requires the presence of a clear and rational statement of goals. Schools are a reflection of the dynamic society within which they exist.

DeBorja, Quintin R. "Organizations: A Humanistic Approach," *Philippine Journal of Public Administration*, XII (1968), pp. 388-394.

The author raises the following moral problem: "Should the worker exist for the process of production, or production for the worker?" He feels that the humanist answer is the latter, and that humanism and socialism are joined. From the view of socialist humanism, the author believes that present proposals to "liberalize" the management of organizations in capitalist society are but desperate attempts to stave off the inevitable socialization of the means of production. Modern organization theory in the United States, since it is only an ideological superstructure reflecting the economic basis of its society, has failed to recognize the historical movement of the times.

Keeley, Benjamin. "Consequences of Change: A Case for Guidelines," *College and University Business*, XLVII (October, 1969), pp. 57-59.

Five consequential categories are discussed in terms of decisions regarding the creation or dissolution of colleges within the organizational structure of a university: (1) educational or academic consequences, (2) political consequences, (3) promotional consequences, (4) consequences on faculty morale, and (5) administrative consequences. The author states that the single most important question a university can ask itself is what will be the long-term consequences of any proposed change in terms of what the university is and should become.

Lewis, Arthur J. "Educational Leadership - Whose Responsibility Is It," Central Ideas, XIX (January, 1969), pp. 1-3.; Commentary on Administrative Theory, XXVII (March, 1969), pp. 1-3.

The author believes that educational leadership must facilitate the schools' reexamination of their goals in relation to changes in society. According to the author, the quality of educational leadership will be measured by the extent to which it helps schools achieve their goals by maintaining an efficient goal-oriented operation, by developing new goals appropriate to a changing society, and by introducing innovations designed to remedy defects and to assist schools in achieving new goals.

Lombard, George F. F. "Relativism in Organizations," Harvard Business Review, XLIX (March-April, 1971), pp. 55-65.

Lombard describes the general cultural trend to relativism wherein business organizations are asked to respond, not only to traditional goals (profit, costs, turnover), but to meet such goals as individual needs, group norms, and social causes. This article deals with the meaning and implications of relativism for managers. After describing it first in an educational setting, the author turns to a series of studies showing the utility of relativism in management of corporations and other types of organizations. Implementing relativism in management will call for: conceptualization of managerial problems in their full, human complexity; examination of problems from various perspectives; evaluation of decisions upon multiple bases; ideas, rather than ideologies should be used; problem solving should be more dependent upon information processing; executives must assess the frameworks they use in evaluating situations.

Lopate, Carol, et. al. "Decentralization and Community Participation in Public Education," Review of Educational Research, XL (February, 1970), pp. 135-150.

The author believes that three questions are inherent in any evaluation of a centralized or decentralized political system: (1) to what extent are the primary needs and expressed wishes of clients of the system represented in the process? (2) are the identification and involvement of the clients with the process advanced or retarded? and (3) is the system maximally efficient in accomplishing its purpose? He feels that since educational goals are largely defined in terms of preparing individuals for functioning in a democratic society, the three questions are interrelated.

Martin, Ann M. "Media and Methodology in Effecting Change," Educational Technology, IX (December, 1969), pp. 35-38.

The author believes that the major change of note in curriculum development is that curriculer goals for public school systems, once tied to arbitrary standards, are now being related to more functional criteria of school achievement and success. Two major unresolved issues implicit in the media movement are discussed:

1. We have not as yet resolved the criterion problem, which in this case is an adequate operational measure of what is to be learned; hence, change to what?
2. We have not as yet devised a systematic way of translating curriculum objectives of what is to be learned into the appropriate media and methodology for effecting change.

Meier, Richard L. A Communications Theory of Urban Growth. Cambridge: Massachusetts Institute of Technology Press, 1970.

This book attempts to form a conceptual model of the city and to deduce the place of communications in urban problems. This concept of communications embraces conversations among neighbors (and the counter-communication called "privacy"), newspapers, television and radio, libraries, etc., and attempts to formulate an over-all picture of urban communications systems. The author notes that these communications exist on many levels, from private conversations to public pronouncements and relates those communications networks to several kinds of urban growth and to the effects of the various kinds of communications media. The author deals with the implications of community identity and civic spirit and with the subsystems of identity and spirit that are represented by the city's neighborhoods. He treats the city as an occupier of space and time and as a spender and generator of resources, culture and communications networks. What is unique in this book is the author's treatment of communications effectiveness as a problem, cost and resource for an urban area. The author concludes that the city is an open-ended system and, therefore, must encourage redundancy and conservation in its paths of communications in order to serve as a progressive cultural force and to enable it to survive as a socio-cultural entity in the modern world.

Miljus, Robert C. "Effective Leadership and the Motivation of Human Resources," Personnel Journal, XLIX (January, 1970), pp. 36-40.

The author believes that the most difficult responsibility of the manager currently is and will continue to be the effective utilization of human resources. He argues that much of the answer to this problem lies in creating an environment in which individuals may satisfy their own particular goals, while at the same time contributing in a responsible manner to the attainment of organization objectives. The important steps in creating and maintaining a meaningful work environment are presented as follows:

1. Determine realistic objectives.
2. Provide necessary resources.
3. Make expectations known.
4. Provide adequate reward structure.
5. Delegate authority and invite participation.
6. Remove barriers to effective performance.
7. Appraise performance and communicate results.
8. Show consideration for employees.

Murdick, Robert G. "Managerial Control: Concepts and Practice," S.A.M. Advanced Management Journal, XXXV (January, 1970), pp. 48-52.

Insuring that performance achieves organizational goals is seen to be the purpose of control in organizations. The author believes that controlling can be achieved through two processes: (1) coordination, which entails planning for and obtaining unified action during the work process as opposed to correcting after the fact for deviations from standards; and (2) measuring and correcting after the fact for deviations in performance beyond established limits which indicate established goals and standards will not be achieved.

Newmann, Fred M., and Donald W. Oliver. "Education and Community," Harvard Educational Review, XXXVII (Winter, 1967), pp. 61-106.

The authors believe that the research and development mentality, particularly as manifested in the current emphasis on systems, thrives on gadgets, engineering metaphors, and the fever of efficiency, but rarely questions the purposes to which its technology is applied. They believe that past attempts to change schools were not attempts to reconstruct the total context through which the community pursues its educational aims.

Smith, Herbert A. "Curriculum Development and Instructional Materials," Review of Educational Research, XXXIX (October, 1969), pp. 397-413.

Current research is criticized in that it seems to be mainly discipline, rather than pupil or learning, centered, and in that the ends of education appear to be subordinated to transitory fashions in educational haberdashery.

Wieland, George F. "The Determinants of Clarity in Organization Goals," Human Relations, XXII.(April, 1969), pp.161-172.

The author discusses two kinds of clarity-unclarity of the goals or purposes of organizations. First, a goal may be clear or unclear according to the amount of knowledge organizational members have concerning the goal. Second, a goal may be clear or unclear depending on the consensus or lack of consensus among members regarding the organizational goal.

III. ORGANIZATIONAL STRUCTURE

The Administrative Organization of School Districts. Washington, D. C.: Administrative Leadership Service, Educational Service Bureau, 1966.

Educational organization is seen as an attempt to define duties and responsibilities, power and authority, and relationships among individuals in such a manner that the purposes of the school system can be realized and that each staff member understands his relationship to others. This publication attempts to portray guidelines for compiling the organizational chart, the last step in developing an organizational plan.

The Administrative Organization of the School System of New Haven, Connecticut. Boston: Arthur D. Little, Inc., August, 1961.

This report contains a review and analysis of the central administrative structure of the New Haven School System. Recommendations made by Arthur D. Little, Inc., the consulting firm, to the New Haven Board of Education are included.

Anderson, Robert H. "How Organization Can Make the School More Humanistic," The National Elementary Principal, XLIX (January, 1970), pp. 6-13.

Three dimensions of an ideal school organizational pattern are discussed: (1) nongrading, (2) some kind of staff collaboration, and (3) a more open, somewhat larger pupil family that is sufficiently heterogeneous to permit these things and large enough so that really workable and efficient sub groups can be created within it.

Andes, John. "Alternative Models for Organization and Administration of Urban School Systems." Gainesville: College of Education, University of Florida, (n.d.).

This is a working paper on a project which focused on three basic areas: (1) to describe existing models of urban school administration, decision making and communication; (2) to conceptualize and describe alternative organization and administration models for urban school systems; and (3) to conceptualize the organizational arrangement and procedures for facilitation of management of inter- and intra-organizational conflict. Three basic types of urban school bureaucratic organizations were identified in a study of existing patterns: (1) consolidation, (2) centralization, and (3) decentralization. Two pluralistic models of urban school organization and administration are described as alternatives to traditional bureaucratic models: (1) the federal model, and (2) the model of egalitarian professionalism.

Andes, John. "Alternative Models for Urban School District Organization," Educational Administration Quarterly, VII (Winter, 1971), pp. 64-86

Two basic approaches to district organization were revealed in a survey of large school districts: (1) the administrative centralized models, and (2) the administrative decentralized models. The centralized models were of three types: (1) unified city or county, (2) unified city and county, and (3) state. The decentralized models were of two types: (1) instructional decentralization and (2) regional decentralization. Two alternative models which have been experimented with are described as feeder school decentralization model and community control model. The author proposes the following alternative models: (1) the state regional educational service agency model, (2) the metropolitan educational service agency model, (3) the coordinated community resources corporation model, and (4) pluralistic models.

Bennis, Warren G. "Communication Problems in Large Organizations," Urban School Administration, Troy V. McKelvey and Austin D. Swanson (eds.). Beverly Hills, Calif.: Sage Publications, Inc. 1969.

The author outlines the history and theory of communications in organizations and notes the trend away from the psychology of the individual to that of groups of people. He believes that the old pyramidal form of organizations is out of date, because our world changes more rapidly than that for which such structures were organized, because a larger proportion of workers perform services today and because administration itself has become a separate profession. He feels that the most important problems facing organizations today are providing incentives, distributing power, fixing the position of leaders, providing channels for change, defining the purpose of the organization and planning for the future.

Bice, Garry R. "The Relationship of Group Structural Properties and Communication Behavior Patterns to Opinion Leadership Among Teachers." Columbus: The Center for Vocational and Technical Education, Ohio State University, August, 1970.
The author investigates structural properties and communication behavior characteristics of the school systems in which opinion leaders and isolates among teachers of vocational agriculture work.

Bishop, Lloyd K. "Bureaucracy and Educational Change," The Clearing House, XLIV (January, 1970), pp. 305-309.
The author found a positive relationship between a high degree of bureaucracy within the organizational structure of a school system and the tendency for the system to make significant educational changes. He believes that stability of school systems seems to enhance rather than impede the change process. A stable framework or more stable organizational atmosphere seems to provide a better basis for change to be brought to fruition.

Blau, Peter M. "A Formal Theory of Differentiation in Organizations," American Sociological Review, XXXV (April, 1970), pp. 201-218.
The author attempts to construct a systematic theory of differentiation in organizations consisting of two basic generalizations and nine propositions derivable from them. The two generalizations are: (1) increasing size generates structural differentiation in organizations along various dimensions at decelerating rates; and (2) structural differentiation in organizations enlarges the administrative component.

Bogue, E. G. "The Context of Organizational Behavior: A Conceptual Synthesis for the Educational Administrator," Educational Administration Quarterly, V (Spring, 1969), pp. 58-75.
Individual behavior in organizations is viewed in terms of four perspectives: management philosophy, organizational structure, group membership, and individual personality. The author feels that contemporary hierarchical organizational patterns tend to impede the following: (1) the achievement of individual self-actualization, (2) the occurrence of change and innovation, (3) the effective use of specialists in decision making, and (4) the development of an organic view of the organization.

Craig, John G., and Edward Gross. "The Forum Theory of Organizational Democracy: Structural Guarantees as Time-Related Variables," American Sociological Review, XXXV (February, 1970), pp. 19-33.

The authors suggest a "forum theory of internal democracy" which has the feature of allowing for rapid shifts in participation and which is applicable to voluntary associations and other organizations faced with problems of being responsive to members or clients.

Cummings, Larry. "Organizational Climates for Creativity," Academy of Management Journal, VIII (September, 1965), pp. 220-227.

The author believes that traditional organizational designs tend to hinder creativity.

Deck, Linton L. "Accountability and the Organizational Properties of Schools," Educational Technology, XI (January, 1971), pp. 36-37.

The author maintains that school systems have special properties which make them different from other organizations and that these differences must be taken into account in any effort to devise a system of educational accountability.

Drabek, Thomas E., and J. Eugene Haas. "Laboratory Simulation of Organizational Stress," American Sociological Review, XXIV (April, 1969), pp. 223-238.

Organizational strain is defined as inconsistencies or discrepancies among structural elements. Many types of strains exist at varying levels in all organizations. The authors believe that strain can be effectively conceptualized using the normative, interpersonal, and resource structures (i.e., inconsistencies may exist both within and among elements of each of these structures). They hypothesize that knowledge of strain can be used to explain certain types of organizational change. Organizational stress is defined as the organizational state or condition indicated by the degree of discrepancy between organizational demands and capacity. It is derived from three concepts by which systems are linked to crucial environments: (1) organizational demands, (2) organizational capability, and (3) organizational capacity. Stress is viewed as a continuous variable and refers to the state of the system rather than to sets of stimuli or response patterns. Changes in either demands, capacity, or both, may alter the level of stress. Using data from their research, the authors found that as the degree of organizational stress increases, there will be change in organizational performance structures and that the location of these changes often appeared to be directly related to strains in the system prior to increased stress.

Eisenberg, J. F. "Social Organization and Emotional Behavior," Annals of the New York Academy of Sciences, CLIX (1969), pp. 752-759.

The author states that species differences in social organization are very often related to different capacities to respond to social stimulation, rather than to any absolute loss or gain of a given behavioral mechanism.

English, Fenwick. "The Differentiated Staff: Education's Technostructure," Educational Technology, X (February, 1970), pp. 24-27.

The author believes that the "Technostructure" is coming to education through wholesale changes within the organizational structure in the design of new teaching roles and functions of personnel, forming new kinds of working groups. Collective bargaining is seen as merely refining the old organizational structure. The teaching profession and the public have to be convinced that the solutions to educational problems do not lie in doing better what is currently being done, but in redefining the problems and inventing new solutions.

Ford, Richard W. "The Relationship of Psychological Health of Elementary Principals to the Organizational Climate of Schools." Paper presented at the Annual Meeting of the American Educational Research Association, New York, February, 1971.

A study was conducted to provide data relative to the following questions:

1. What is the relationship between the scores of principals on a measure of psychological health and certain aspects of organizational climate as perceived by the professional teaching staff?
2. What are the similarities and differences on a test purporting to measure psychological health that exist among principals whose schools represent the extremes with respect to the ranking of organizational climate?
3. What is the range of the distribution of scores among the sample population of school principals on a measure of psychological health?
4. What is the range of the distribution of scores among the sample population of elementary schools on a measure of organizational climate?

The following conclusions with regard to the questions posed were arrived at:

1. Psychological health is associated with thrust and consideration behaviors on the part of the principal. The greater the measured psychological health of the principal, the more he tends to motivate teachers through the personal example he sets and the humanistic responses he exhibits toward teachers.

2. Psychological health is associated with the absence of Hindrance and Production Emphasis. The greater the psychological health of the principal, the less he burdens teachers with routine duties, unnecessary requirements, and demands related to task-achievement.
3. Principals serving open climate schools are in general more inner-directed and time-competent than those principals serving closed climate schools. The greater the measured inner-directedness and time competence scores of the principal the more self-directing and efficient he tends to be in his attitudes and actions.
4. Principals serving open climate schools generally possess a higher measured level on all dimensions of psychological health. The principal serving the open climate school is characterized as possessing a greater acceptance of his own aggressiveness, a greater self-acceptance, and a greater capacity for intimate contact than the principal serving the closed climate school.

Gaynor, Alan K. "School Organization for the Seventies." Paper presented at the Annual Meeting of the American Educational Research Association, Minneapolis, March, 1970.

The essential conflict over educational issues is seen as that between those who see schools as pattern-maintenance institutions and those who see schools as adaptive, goal-attaining institutions. It is stated that many school systems attempt to modulate conflict between pattern-maintenance and goal-attainment forces by developing dual organizations, where school systems accommodate change-oriented federal programs not by revising the entire system, but rather by creating a system within a system. The author believes that the acceptance of change as a norm of behavior has been slow and certainly uneven, but that more and more school districts are beginning to accept the ability to adapt as a legitimate standard of organizational behavior.

Ghorpade, Jaisingh. "Study of Organizational Effectiveness: Two Prevailing Viewpoints," The Pacific Sociological Review, XIII (Winter, 1970), pp. 31-40.

The author discusses two different types of conceptual models in the analysis of organizations: (1) the classical model, machine theory, or rational model which views the organization as a rational instrument or machine to accomplish given goals; and (2) the organismic or social system model which looks upon the organization as a social system and emphasizes the functional requirements of the organization under consideration.

Gilman, Richard A. "An Aesthetic Organization Model," Journal of Education, CLII (December, 1969), pp. 50-52.

The author criticizes the traditional bureaucratic model of school organization, which emphasizes pupil control, as being dysfunctional. He envisions the school organization of the future as being composed of highly mobile, rapidly adaptive, temporary subsystems which will be problem oriented. Flexibility and competence, rather than status and role, will be the hallmarks of the future organization.

Golembiewski, Robert T. "Organization Patterns of the Future," Personnel Administration, XXXII (November-December, 1969), pp. 9-24.

The author posits that organization patterns of the near future will emphasize the following: (1) integration rather than differentiation, (2) wriggle room (freedom to act) rather than repression, (3) newness rather than stability, and (4) flow of work rather than functions.

Helsel, A. Ray, Herbert A. Aurbach, and Donald J. Willower. "Teachers' Perceptions of Organizational Climate and Expectations of Successful Change," The Journal of Experimental Education, XXXVIII (Fall, 1969), pp. 39-44.

The authors investigated the hypothesis that teachers' perceptions of organizational climate are related to their expectations that successful change would occur in their schools. Significant relationships were found for dimensions of climate that dealt with principal-teacher relationships, but not for those which dealt with teacher-teacher relationships. The authors speculate that teachers see themselves as having limited impact on change in schools.

Hickey, Michael E. "The Question of Optimal Size of School Districts." Seattle, Wash.: School Information and Research Service, March, 1969.

This document is concerned with the question of size as it is related to school district reorganization. Five reasons for concern with optimum size are given: (1) efficiency of operation, (2) maximum utilization of limited resources, (3) increased public accountability for educational expenditures, (4) equality of educational opportunity, and (5) assumed relationships between size and quality. The following four problems in determining optimum size are mentioned: (1) variability among situations, (2) the wide range of research results, (3) criteria of optimality, and (4) resistance to change. Five characteristics of inadequate districts are: (1) inadequacy of curriculum; (2) inability to draw and hold high quality teachers and administrators, and inefficient use of available staff; (3) economic inefficiencies in terms of high per-pupil expenditures for quality of program provided; (4) inequality of effort required for support; and (5) absences of specialized services.

Holdaway, E. A., and K. A. Vithayathil. "Administrative Ratios in School Systems," The Canadian Administrator, IX (January, 1970), pp. 15-19.
The major finding of the study was that larger school systems tended to have lower administrative ratios than did smaller systems, regardless of how these ratios were defined. The usually-held belief that administrative components of organizations increase out of proportion to the increase in organizational size was contradicted in the study.

House, Ernest R., Joe M. Steele, and Thomas Kerins. "Development of Educational Programs: Advocacy in a Non-Rational System." Urbana: Illinois Gifted Program Evaluation, Center for Instructional Research and Curriculum Evaluation, University of Illinois, November, 1970.
The purpose of this study was to ascertain the sequence of events necessary to program development, and, further, on the basis of judgments of quality about the individual programs, to distinguish the different patterns of development leading to high and low quality programs. It was determined that the development of a new, quality program is dependent upon the interaction of a small number of powerful variables. These variables are: (1) the size of the developing unit, (2) the norms of the unit toward the innovation, (3) the opinion leadership exerted within the district in behalf of the innovation, (4) the status of the advocate within the system, and (5) the contact of the system with the outside world.

Jessop, R. D. "Exchange and Power in Structural Analysis," Sociological Review, XVII (November, 1969), pp. 415-437.
The author attempts a synthesis of three general orientations to structural analysis by focusing on two aspects of social structure which appear more or less explicitly in all three orientations. The three orientations are consensus, conflict and exchange models. The two aspects of social structure are power and exchange models.

Kenney, James B., and R. Robert Rentz. "The Organizational Climate of Schools in Five Urban Areas," Elementary School Journal, LXXI (November, 1970), pp. 61-69.
The authors found that the factor structure identified by the Organizational Climate Description Questionnaire in an urban elementary school setting was significantly different from the factor structure identified by the originators of the instrument in non-urban core schools.

Leach, Rodney. "Determining the 'Shape' of your R&D Organization," European Business, (October, 1969), pp. 9-17.
Five key features which make up the technological profile of a business are discussed: (1) the research and development mix, (2) the degree of interaction between research/development departments and succeeding functions of manufacturing and sales, (3) the product life cycle, (4) relative size of research and development investments, and (5) approach to the frontier of knowledge.

Levine, Daniel U. "Concepts of Bureaucracy in Urban School Reform," Phi Delta Kappan, LII (February, 1971), pp. 329-333.
The author discusses the following dysfunctions within the educational bureaucracy in urban schools: (1) institutional complexity and overload, (2) goal displacement, (3) deficiencies in communications and decision-making processes, and (4) social and psychological distance between client and institution. The following prescriptions are proferred as possibilities for overcoming the afore-mentioned dysfunctions:

1. Making authority relations in a school or school district less "vertical" in order to place certain necessary decision-making powers and responsibilities in the hands of staff members who work directly with clients has little to do explicitly with "democratic" administration.
2. Outstanding administrative leadership is by far the most important variable necessary for successful reform in urban schools.
3. The critical importance of the building principal is closely linked to the cherished dream of individualization of instruction.
4. Much of the principal's leadership in establishing lateral authority relations can be discussed in terms of what he does to provide each party (i.e., teachers, students, parents) with a firm power base in school decision making.
5. Urban schools should be built up of (or broken down into) small, relatively autonomous operating units.
6. The crucial factor in making use of promising practices from another school is to make sure that the organizational structure of the receiving institution is designed to implement the innovation effectively.
7. Urban schools are not going to be rebuilt as effective institutions unless we first sweep the deck of existing organizational structures and practices which constitute fundamental obstacles to the attainment of educational goals.

Link, Frances R. "Social Planning and Social Change," Educational Leadership, XXV (February, 1968), pp. 387-390.

The author argues that the pyramidal structure of our schools was established to handle routine tasks and that there is nothing routine about working with people in the processes of supervision and curriculum development. It is suggested that for the problems in education we learn how to move people horizontally as well as vertically, utilizing the temporary assignment-by-task approach.

Mackay, D. A. "Research on Bureaucracy in Schools: The Unfolding of a Strategy," Journal of Educational Administration, VII (May, 1969), pp. 37-44.

Using research on the bureaucratic structure of schools as an example, the author discusses the following question: "What is the most appropriate strategy to use in planning research programs in areas of inquiry where theory is not yet adequately developed and to what extent should a theoretical framework be viewed as a well-determined explanatory and predictive scheme as compared with the view that it is a guide to inquiry?"

Majoribanks, Kevin. "Bureaucratic Structure in Schools and Its Relationship to Dogmatic Leadership," The Journal of Educational Research, LXIII (April, 1970), pp. 355-357.

The author investigated the relationship between the dogmatic structure of school principals and the bureaucratic organization of schools. His data suggest an absence of significant principal-dogmatism effects on the bureaucratic structure of schools.

Marcum, R. Laverne. "Organizational Climate and the Adoption of Educational Innovation." Logan: Utah State University, 1968. (ED 023 158)

A study was conducted to determine those factors which inhibit or cause change to occur in a school system. Data were gathered from 1,058 teachers and administrators from thirty schools in five western states. Halpin and Crofts' Organizational Climate Description Questionnaire was administered to the teachers and principals of the thirty schools to determine the climate of the school. It was concluded that schools involved in innovational practices were also characterized by open climates, higher expenditure per student, younger professional staff, lower tenure in the school, and a larger number of professional staff. Also, principals in the most innovative schools perceive the climate as more open than do the teachers; however, the teachers still viewed the climate as open. Finally, younger teachers, larger number of professional staff, and the lower mean number of years at a school were associated with the open climate schools.

Margulies, Newton. "Organizational Culture and Psychological Growth," The Journal of Applied Behavioral Science, V (October-November-December, 1969), pp. 491-508.
The author explores the question of whether organizations can provide an environment which is conducive to the satisfaction of individual needs. He believes that it is possible to identify and describe organizational cultures which are associated with particular degrees of individual psychological growth. He believes that the requirement and challenge for the manager is to view himself as an architect of sociotechnical systems.

Michaelis, Michael. "The Management of Change," The Futurist, V (February, 1971), pp. 9-11.
The author maintains that the application of new knowledge is restrained by the outmoded behavior of our institutions, and that most of our organizations have a structure and exhibit behavior that were designed to solve problems that no longer exist. A more functional orientation, as opposed to the presently predominant product orientation, on the part of institutions is seen as an answer to this problem.

Morse, John J., and Jay W. Lorsch. "Beyond Theory Y," Harvard Business Review, XLVIII (May-June, 1970), pp. 61-68.
The authors compare two competing approaches to the problems of human administration and management: (1) the classical school of organization, which emphasizes the need for well-established lines of authority, clearly defined jobs, and authority equal to responsibility; and (2) the participative approach, which focuses on the desirability of involving organization members in decision making so that they will be more highly motivated. They suggest that there is not one best organizational approach, but rather the best approach depends on the nature of the work to be done. Out of the comparison, they recommend a third approach, called Contingency Theory, which is described as the fit between task, organization and people. The basic relationships in the Contingency Theory are those between and among the following: (1) organization-task fit, (2) effectiveness of task performance, and (3) individual sense of competence motivation. The basic assumptions of the Contingency Theory are as follows:

1. Human beings bring varying patterns of needs and motives into the work organization, but one central need is to achieve a sense of competence.
2. The sense of competence motive, while it exists in all human beings, may be fulfilled in different ways by different people depending on how this need interacts with the strengths of the individuals' other

needs--such as those for power, independence, structure, achievement, and affiliation.

3. Competence motivation is most likely to be fulfilled when there is a fit between task and organization.
4. Sense of competence continues to motivate even when a competence goal is achieved; once one goal is reached, a new, higher one is set.

The authors indicate how the theory can be successfully applied by showing how different types of organizations have different climates on the following organizational dimensions: (1) structural orientation, (2) distribution of influence, (3) character of superior-subordinate relations, (4) character of colleague relations, (5) time orientation, (6) goal orientation, and (7) top executive's managerial style.

Mosher, Edith K. What About the School Research Office? Berkeley, Calif.: Far West Laboratory for Educational Research and Development, February, 1969.

The author decries the lack of support and commitment to research, planning, research-utilization, and innovation activities in local school districts. It is believed that the traditional organization patterns of school districts and the occupational bias of educators account for much, but not all, of the lag in acceptance of administrative practices that are widespread elsewhere. The school is described as an environment which puts a premium on ability to maintain the status quo and avoid controversy. School districts are described as devoting all their management resources to mere survival and year-to-year maintenance operations. The author reports preliminary evidence concerning the views and actions of a small minority of school administrators who have already been involved in designing formal arrangements for school-based research and development programs, or who are seriously studying the organizational implications of self-renewal processes in their districts.

Patterson, Wade N. "Needed---Major Change In School Organization," School and Community, LIV (February, 1970), p. 30.

The author argues for a collegial organization in schools on the grounds that the educational profession is rapidly increasing in members who possess professional expertise and commitment, qualities too often forced to remain dormant in organizations with many steps of authority.

Pellegrin, Roland J. "Some Organizational Characteristics of Multiunit Schools." Paper presented at a Meeting of the Multiunit School Personnel of the Wisconsin Research and Development Center, Madison, May, 1969.

The author presents preliminary results of a study on multiunit schools, schools with research and instruction (Rand I) units. Rand I units are an organization scheme for research utilization.

Peter, Laurence J. "When You Reach Your Level of Incompetence," Association Management, XXII (January, 1970), pp. 33-36.

The author believes that incompetence is rampant in a never-never land termed hierarchy, an organization whose members are arranged in ranks and grades and where each rank except the lowest is filled by promotion from the rank below.

Pettibone, Timothy J. "Organizational and Interpersonal Dimensions of the Elementary School." Paper presented at the Annual Meeting of the American Educational Research Association, New York, February, 1971.

The purpose of this study was to: (1) select and apply an appropriate methodology for investigating interpersonal relations in the elementary school; and (2) test hypotheses relevant to and derived from General Systems Theory, Equilibration Theory, and the "Span of Control" principle of Classical Management Theory.

The following hypotheses were tested:

1. Subsystem (teacher) interactions will explain a greater amount of system (school climate) variability than will subsystem (teacher) attributes.
2. Classification of teachers as influentials and non-influentials in relation to informal groups will be predictable from measures of teacher behavior and teacher attributes.
3. Socially active teachers will be more alike in their perceptions of principal behavior than will those of non-socially active teachers.
4. Isolated teachers will perceive the behavior of their fellow teachers significantly different than will non-isolated teachers.
5. When the extent to which teachers rely upon each other is taken into account, the "real" span of control for principals will be eight or less subordinates.

The hypotheses were confirmed with the exception of the third one above, which was rejected.

Punch, Keith F. "Bureaucratic Structure in Schools: Towards Redefinition and Measurement," Educational Administration Quarterly, V (Spring, 1969), pp. 43-57.

The author opts for a dimensional approach to bureaucratic structure. Bureaucratic structure is conceptualized as a unitary, homogeneous variable only if restricted to the dimensions of hierarchy of authority, rules for incumbents, procedural specifications, and impersonality. Bureaucratization refers to the degree of emphasis on them. If specialization and technical competence are included in bureaucratic structure, it is seen as a two-factor, and not a unitary, concept.

Reeser, Clayton. "Some Potential Human Problems of the Project Form of Organization," Academy of Management Journal, XII (December, 1969), pp. 459-467.

In investigating whether project organization, by its very nature, has the built-in capacity of causing some unique human problems, the author suggests that subordinates in project organizations experience the following problems more so than subordinates in functional organizations: (1) insecurity about possible unemployment, career retardation, and personal development; (2) frustration casued by "make work" assignments, ambiguity and conflict in the work environment, and multiple levels of management; (3) frustration casued by having more than one direct superior; and (4) less loyalty to their organizations. The author concludes that although there are persuasive justifications for the adoption of project organization, relief from human problems is not one of them.

Skinner, Elizabeth W. "Relationships Between Leadership Behavior Patterns and Organizational-Situational Variables," Personnel Psychology, XXII (1969), pp. 489-494.

A study was conducted to examine the form and degree of relationships between Consideration and Structure as measured by the Supervisory Behavior Descriptor (SBD) and the Leadership Opinion Questionnaire (LOQ) and three selected organizational criteria (turnover, grievance rates, and supervisory ratings) as well as three situational variables (department size, working conditions, and employee skill). The firmest conclusions to be made from the data obtained in the present study are primarily ones which serve to corroborate earlier studies. In accordance with Fleishman and Harris's findings a very definite curvilinear relationship was found between SBD Consideration and Structure and grievances and turnover. As expected, high Consideration was associated with low grievance and turnover rates.

Turk, Herman. "Interorganizational Networks In Urban Society: Initial Perspectives and Comparative Research," American Sociological Review, XXXV (February, 1970), pp. 1-19.

The author investigates the activity levels and complexity of new interorganizational networks as an observable consequence of prior degrees of social integration defined in organizational terms.

Usdan, Michael D. "A Regional Approach to Educational Problems: Implications for Central Schools and Their City Neighbors," Central Ideas, XIX (March, 1969), pp. 1-4.

The author suggests centralization of educational authority and responsibility may be irreversible in our complex, ever-changing, interrelated society.

Walker, Arthur H., and Jay W. Lorsch. "Organizational Choice: Product vs. Function," Harvard Business Review, XLVI (November-December, 1968), pp. 129-138.

The authors believe that the functional organization seems to lead to better results in a situation where stable performance of a routine task is required, and that the product organization leads to better results in situations where the task is less predictable and requires innovative problem-solving.

Willower, Donald J. "The Teacher Subculture and Curriculum Change." Paper presented at a Faculty Seminar, Temple University, Philadelphia, May, 1968.

While the public school faces few pressures for excellence in the sense that it need not be top flight to survive, it is nevertheless vulnerable to other kinds of pressures and it must carry out a massive social task in a context of ambiguous goals, hazy success criteria, and a vague work technology. The author emphasizes that structures which decrease the school's vulnerability to petty demands, which increase its responsiveness to educational goals, and which protect and encourage idealistic teachers and administrators are needed.

IV. ORGANIZATIONAL DEVELOPMENT

Abbott, Max G., and C. Michael Stuart. "The School Over Time: Our Findings Compared with Those of Waller." Paper presented at the Annual Meeting of the American Educational Research Association, Los Angeles, February, 1969.

The authors note that, although the observation that the school organization is becoming increasingly bureaucratized is hardly new, no real test of this hypothesis has yet been made. They also state that there is some evidence for a "debureaucratizing" outcome to teacher-student interaction.

Beckhard, Richard. Organization Development: Strategies and Models. Reading, Mass.: Addison-Wesley Publishing Company, 1969.

Organization development is defined as an effort planned organization-wide and managed from the top to increase organization effectiveness and health through planned interventions in the organization's processes, using behavioral-science knowledge. Developing a strategy for systematic improvement of an organization entails an examination of the present state of affairs through diagnosis in two broad areas: (1) the various subsystems that make up the total organization system, and (2) the organization processes that are occurring. The term "change manager" is used to refer to those who are responsible for the organization's operations and effectiveness and who must accept major management responsibility in any planned organization or unit-wide change effort. The term "change agent" is used to refer to those people, either inside or outside the organization, who are providing technical, specialist or consulting assistance in the management of a change effort. Alternative arrangements for linking organizations and outside resources and for the use of internal change agents are described.

Bennis, Warren G. Organization Development: Its Nature, Origins, and Prospects. Reading, Mass.: Addison-Wesley Publishing Company, 1969.

Organization development is described as a complex educational strategy intended to change the beliefs, attitudes, values, and structure of organizations so that they can better adapt to new technologies, markets, challenges and the dizzying rate of change itself. Seven characteristics of organization development are explained: (1) its educational strategy is designed to bring about planned organization change; (2) the changes sought for in the effort are coupled directly with the exigency or demand the organization is trying to cope with; (3) its educational strategy emphasizes experienced behavior; (4) change agents in organization development are usually external to the client system; (5) it implies a collaborative relationship between change agent and client system; (6) its change agents share a social philosophy which emphasizes humane and democratic values and which governs their responses to client systems; and (7) its change agents share a set of normative goals based upon their philosophy. The author emphasizes that the basic value underlying all organization development theory and practice is choice. Four relevant threats to bureaucracy are described: (1) rapid and unexpected change, (2) growth in size where the volume of an organization's traditional activities is not enough to sustain growth; (3) complexity of modern technology where integration between activities and persons of very diverse, highly specialized competence is required, and (4) a psychological threat springing from a change in managerial behavior. Types of interventions are portrayed as follows: (1) discrepancy, (2) theory, (3) procedural, (4) relationship, (5) experimentation, (6) dilemma, (7) perspective, (8) organization structure, and (9) cultural. A need for the inclusion of power and conflict dimensions in organization development models is seen.

Bennis, Warren G. "Unsolved Problems Facing Organizational Development," Business Quarterly, XXXIV (Winter, 1969), pp. 80-84.
Organizational development is described as a response to complex challenges, an educational strategy which aims to bring about a better fit between the human beings who work in and expect things from organizations and the busy, unrelenting environment with its insistence on adapting to changing times. The author discusses three unresolved problems which may prevent organizational development from reaching its true strength: (1) the politics of change--models of change associated with organizational development systematically avoid the problem of power; (2) structure versus climate--organizational development pays lip-service only to structural or technological changes, while relying only on a change in organizational climate; and (3) the profession of organizational development--organizational development falls short when compared with other more mature professional callings.

Blake, Robert R., and Jane S. Mouton. Building a Dynamic Corporation Through Grid Organization Development. Reading, Mass.: Addison-Wesley Publishing Company, 1969.
The authors draw a distinction between evolutionary change, revolutionary change, and systematic development. Systematic development is seen as avoiding the halting progress of evolution and the disruptions of revolution, and as substituting enthusiasm and dedication for passivity or resistance. Seven conditions are given as necessary to systematic development:

1. To change a company, it is necessary to change the whole company.
2. To change a company, it is necessary for those who head the company to lead the change of it.
3. To change a company, the effort must be a do-it-yourself, a pick-yourself-up-by-the-bootstraps operation.
4. To change a company, it is necessary to apply systematic ways of thinking and anlaysis to achieve a corporate model of excellence.
5. To change a company, it is necessary to see, understand, and get people committed to changing all of those activities which are at present not what they should be.

6. To change a company, it is necessary for those leading and managing it to study their own company situation in specific, operational terms.
7. To change a company, it is necessary to proceed in a sequential and orderly way.

Six phases of grid organization development are discussed:

1. In phase 1, the Managerial Grid is studied as a theoretical framework for understanding behavior dynamics of the corporation's culture.
2. In phase 2, the behavior dynamics of actual organization teamwork is studied and tested against the Grid model for the perfection of problem-solving methods.
3. In phase 3, the interworkings between organized units of the company are tested against the Grid.
4. In phase 4, the top team studies the properties of an Ideal Strategic Corporate Model in order to bring corporate profitability logic to a maximum thrust condition.
5. In phase 5, tactics are implemented for converting the corporation to what it will become under the Ideal Strategic Corporate Model.
6. In phase 6, changes in conditions from pre-phase 1 to post-phase 5 as measured for the evaluation and stabilization of achievement and for the setting of new goals and objectives of accomplishment for the future.

Bowers, David G. Three Studies in Change: An Account of Data-Based Organizational Development Activities in Three Continuous Process Firms. Ann Arbor: Institute for Social Research, University of Michigan, September, 1969.

The author describes three efforts in organization development and explores some of the implications of the efforts which are most obvious for the process of managing organization development activities. Two of the efforts described were largely successful, while one ended on a largely unsuccessful note.

Boyer, Ronald K. "Development for the New Organizational Team," Business Quarterly, XXXIV (Winter, 1969), pp. 64-71.

The article focuses on the use of laboratory methods in an organizational development program designed to enhance the effectiveness of new organizational teams. The general problems facing the new organizational teams and the organizations which form them are portrayed as follows:

1. What resources will the new team need?
2. How will the new team use its resources?
3. How soon, if ever, will the new team become effective?

Seven main areas of concern in organizational development programs are identified: (1) the authority structure versus a multitude of complex interpersonal working relationships which bridge functions and individuals; (2) interdependency among people and functions; (3) the creative management of uncertainty; (4) the management of conflict; (5) openness, direct communication, trust, self-insight, and interpersonal competence; (6) relationships with dynamic environments; and (7) a systems approach to interrelate individual skills, attitudes and behavior, interpersonal relationships and competence, organizational structure and policies, and organizational technology.

Bradley, Harold B. "Problems of Planned Innovation in Corrections." The Annals of the American Academy of Political and Social Science, CCCLXXXI (October, 1969), pp. 89-98.
The major theme of the paper is the need to design correctional organizations that can respond to change. Adaptive innovation is defined as a response to a situation after the fact, rather than a response to a need, and is almost always adapted to the system rather than the other way around. Planned innovation is defined as a response to a need in advance of the situation that actively demonstrates its need, and presupposes a system which is in a state of constant readiness to adapt as the need for change becomes apparent, a system that is designed to respond to change. Several problems encountered in designing for change are discussed. The author sees the need for a design phase in program development prior to the planning of specifics for action in order to ensure an eventual program that is not based on unexamined concepts and contradictory goals. Also necessary to innovative planning is an environment that protects planners from the decision-making world without isolating them from it. The need for research and evaluation of correctional practices is stressed. Tasks as contrasted with functions are seen as highly amenable to measurement and evaluation, and correctional organizations that emphasize task-orientation over functional performance are advocated. Lastly, the need to view change as a process rather than isolated single events is emphasized. Changes are events or a series of events, whereas change is a continual process.

Brianas, James. "The Role of Human Relations Analysis in Management Engineering Activities," Personnel Journal, XLVIII (September, 1969), pp. 691-697.
The role and uses of survey methodology are discussed.

Clark, Peter A., and Janet R. Ford. "Methodological and Theoretical Problems in the Investigation of Planned Organizational Change," Sociological Review, XVIII (March, 1970), pp. 29-52.
The authors argue that planned organizational change is an area which requires sociological research both for reasons of the development of the discipline and because the activity of planned organizational change raises a number of social and ethical problems. They believe

that present knowledge and understanding are clouded by existing published accounts of planned organizational change. They describe how the Center for the Utilization of Social Research, in England, is tackling the theoretical and empirical problems. The approach calls for a tandem relationship between consulting work and concurrent research on the intellectual activities of the consluting team and the relational aspects of the consulting process.

Crockett, William J. "Team Building -- One Approach to Organizational Development," The Journal of Applied Behavioral Science, VI (July-August-September, 1970), pp. 291-306.

This article describes the first team-building meeting between a manager and his subordinates held in the Department of State of the federal government. The team-building approach utilized was seen as facilitating organization development.

Croft, John C. "Organizational Development for Thornlea: A Communication Package and Some Results," Journal of Applied Behavioral Science, VI (January-February-March, 1970), pp. 93-106.

The author believes that most organizations have a structure which was designed to solve problems which no longer exist. Looking at the school as a social system or organization, he views organizational development as being directed toward developing the capabilities of an organization in such a manner that it can attain and sustain an optimum level of performance. Organizational development is viewed as a problem-solving process which is undertaken on a collaborative basis by a combination of the members of an organization and behavioral science practitioners. Utilizing assumptions which are supported in the behavioral science literature, the author presents the following as objectives for an organizational development program in a school setting:

1. To create an open problem-solving climate throughout the organization.
2. To supplement the authority associated with role or status with the authority of knowledge and competence.
3. To locate decision-making and problem-solving responsibilities as close to the information sources as possible.
4. To build trust among individuals and groups throughout the organization.
5. To make competition more relevant to work goals and to maximize collaborative efforts.
6. To develop a reward system which recognizes both the achievement of the organization's mission (profits or service) and organization development (growth of people).

7. To increase the sense of "ownership" of organization objectives throughout the work force.
8. To help managers to manage according to relevant objectives rather than according to "past practices" or according to objectives which do not make sense for one's area of responsibility.
9. To increase self-control and self-direction for people within the organization.

The author stresses that people in education need to pay a little less attention to the setting of utopian goals and the designing of ways to evaluate whether the goals are being obtained; rather, they should deal more creatively with what is available and build the strong relationships and organizational health necessary to creating a strong enough internal state or stamina for such an organization to flourish and grow.

Davis, Sheldon. "Building More Effective Teams," Innovation, (October, 1970), pp. 32-41.

The author defines Organization Development as a growing body of techniques and approaches designed to help managers cope, in a systematic way, with rapid change in their organizations. Team building is seen as an important facet of Organization Development and is defined as any organizational element, whose members have a common supervisor, spending time together in an effort to improve their effectiveness as a team.

Derr, C. Brooklyn. "Organization Development in One Large Urban School System," Education and Urban Society, II (August, 1970), pp. 403-419.

The author lists the essential components of the organization development (OD) method as:

1. The scope: it is an organization-wide effort to change the system.
2. The method of working: premised on the assumption that those who really know the system best and have a reason for wanting to change it are the members of the organization, OD specialists attempt to transfer their skills and knowledge to their clients through collaboration so that the clients can independently be responsible for their own organizational change.
3. The need for legitimacy: OD recognizes organizational authority as a force which could destroy any effort to change an organization and, therefore, OD specialists insist on the approval and active collaboration with those at the top of the organizational hierarchy.
4. The definition of an organization: any system made up of three or more persons with a purpose (it is assumed that most OD will be done in complex organizations comprised of many persons and multiple goals) that can

act independently enough to make its own decisions about whether, where, and how it will change.

5. The targets of change: any aspects of the system (persons, structure, general culture, attitudes, methods of working together) that need to be changed in order for the organization to meet its effectiveness criteria as defined by the client.

Derr, C. Brooklyn. "Organizational Adaptation to Forces for Change in a Big City School System." Paper presented at the Annual Meeting of the American Educational Research Association, New York, February, 1971.

Utilizing the Lawrence and Lorsch approach to organizational analysis, a study was conducted to determine the extent to which a large eastern urben school system was adapting to its organizational environment. It was determined that the school system studied had not adapted to the environmental requirements on differentiation or collaboration, but did show a high degree of integration. It was indicated, however, that, if the school system moved to differentiate and collaborate more, the high quality of relationships (integration) could dissolve because they were untested in a work situation. In sum, it was decided that this school system had not adapted to its environmental requirements.

Derr, C. Brooklyn. "The Utility of Organization Development Methods for Educational Planning." Paper presented at a JSGOMRAM Meeting, Burlingame, Calif., November, 1970.

The relationship between human behavior and organizational development is explored. The author believes that certain current planning practices are at odds with normal human behavior, such as the tendency to subvert plans which one has had no part in making, to seek independence for oneself, to hoard information. The solution is to have decisions made at the level at which the necessary information is generated. A program for implementing such programs has been developed at the University of Oregon. It consists of improving communication skills, changing norms and structural change. It promises to enable organizations to overcome the human factors in resistance to planning by encouraging trust and willingness to cooperate within an organization.

Doak, E. Dale. "Organizational Climate: Prelude to Change," Educational Leadership, XXVII (January, 1970), pp. 367-371.

The factors which determine organizational climate are described as follows: goal definition, leadership style, morale, and self-worth. The stages in the change process are seen to be: (1) organizational climate, (2) disequilibrium, (3) input alternatives, (4) selection and adaptation, (5) trial and evaluation, and (6) adoption or revision.

Dyer, William G., *et al*. "A Laboratory-Consultation Model for Organization Change," *The Journal of Applied Behavioral Science*, XI (April-May-June, 1970), pp. 211-231.

A project which sought to optimize both entry methods and transfer activities by a single developmental approach using laboratory training to build a consulting relationship between internal consultants and their operating managers in an industrial organization is discussed. The elements of this design included: (1) laboratory training as an initiating vehicle, (2) the use of internal Trainer-Consultants (persons who diagnose management and organization needs, design a training program for certain personnel, and then conduct the program), (3) the use of data collection and feedback, and (4) a single management and organizational conceptual framework. While this design reduced entry and transfer problems, other problems occured: (1) uneven skill on the part of the managers to implement laboratory learnings, (2) some lack of skill on the part of the Trainer-Consultants to intervene effectively, and (3) the existence of certain organization conditions that do not support change.

French, Wendell. "Organization Development Objectives, Assumptions and Strategies," *California Management Review*, XII (Winter, 1969), pp. 23-24.

Organization development is defined as a long-range effort to improve an organization's problem-solving capabilities and its ability to cope with changes in its external environment with the help of external or internal behavioral-scientist consultants or change agents.

Typical objectives of organization development programs are presented as follows:

1. To increase the level of trust and support among organizational members.
2. To increase the incidence of confrontation of organizational problems, both within groups and among groups, in contrast to "sweeping problems under the rug."
3. To create an environment in which authority of assigned role is augmented by authority based on knowledge and skill.
4. To increase the openness of communications laterally, vertically, and diagonally.
5. To increase the level of personal enthusiasm and satisfaction in the organization.
6. To find synergistic solutions to problems with greater frequency.
7. To increase the level of self and group responsibility in planning and implementation.

Glueck, William F. "Organization Change in Business and Government," Academy of Management Journal, XII (December, 1969), pp. 439-449.

The author discusses the following dimensions of organization change: (1) the planned-unplanned continuum, where the rational model and the systems model are contrasted; (2) the size and scope of change; (3) the level at which organization change begins, where it is hypothesized that the more the organization perceives itself in crisis, the more likely it will restructure from the top down; (4) the extent to which the proposed change is tested for effectiveness prior to implementation, where it is hypothesized that the more likely the need to change is perceived to be crucial to survival, the more likely the organization will be changed simultaneously; and (5) the elements of the organization that are changed. The author makes a detailed comparison of structural and behavioral approaches to organization change. The following structural approaches or mechanisms are described: (1) to try to solve organization problems by clarifying and defining jobs, changing job content, relationships, coordinating mechanisms, division of functions logically with minimal overlap, and small spans of control; (2) to improve task performance by modifying the flow of tasks to fit the flow of work; (3) to modify the structure to fit the communication needs of the organization of jobs; and (4) decentralization to reduce the cost of coordination and increase the controllability of subunits, to increase the motivation of goal oriented behavior through the use of smaller centers of decision, power, and information, giving greater flexibility and speed of response through local autonomy. The behavioral approach contends that organizations are changed by modifying the values, attitudes and beliefs of the people in the organization. Different kinds of behavioral approaches are described: (1) change in the perceptions, attitudes, motivations, learning, or maturing mechanisms of individuals; (2) change in two-person relationships such as superior-subordinate relationships; and (3) change at the small-group level.

Golembiewski, Robert T. "Organizational Properties and Managerial Learning: Testing Alternative Models of Attitudinal Change," Academy of Management Journal, XIII (March, 1970), pp. 13-31.

The author attempts to work through some of the complex issues involved in organization development via the laboratory approach. He focuses on whether differences in managerial learning of new work-related goals/values, induced by a laboratory experience, can be meaningfully associated with differences in the properties or organization units from which the managers came.

Golembiewski, Robert T., and Stokes B. Carrigan. "Planned Change in Organization Style Based on the Laboratory Approach," Administrative Science Quarterly, XV (March, 1970), pp. 79-93.

This study reports the design and results of an effort to change the organization style of a sales unit in a business organization. The learning design was derived from the laboratory approach to organization development. It was concluded that the learning design seemed to have had the intended effects in that it appeared to induce or reinforce appropriate norms in the experimental unit, and these norms were reported to have changed attitudes as well as behaviors over the four-month period of observation.

Greiner, Larry E. "Patterns of Organization Change," Harvard Business Review, VL (May-June, 1967), pp. 119-130.

The author describes three common approaches to introducing organizational change: (1) unilateral action by decree, by replacement or by structure; (2) sharing of power by group decision making or by group problem solving; and (3) delegated authority by case discussion or by T-group sessions. From this survey of eighteen studies of organizational change, the author characterizes successful changes as follows:

1. They spread throughout the organization to include and affect many people.
2. They produce positive changes in line and staff attitudes.
3. They prompt people to behave more effectively in solving problems and in relating to others.
4. They result in improved organization performance.
5. They are marked by a high degree of consistency and the use of shared power.

He presents a phase scheme for change which hinges on two key notions: (1) successful changes depend basically on a redistribution of power within the structure of an organization; and (2) power redistribution occurs through a developmental process of change and is not a black and white affair occuring overnight through a single causal mechanism.

Grinnell, Sherman. "Organization Development - An Introductory Overview," Business Quarterly, XXXIV (Winter, 1969), pp. 24-31.

Organization Development (OD) efforts are described as a recommended means of coping effectively and continuously with changes and of integrating them in a planned process of development. Two targets of OD efforts are described as follows: (1) improved coping processes, processes that enable individuals and organizational subunits to cope more effectively and continuously with rapid change and complexity; and (2) more effective

individuals, individuals who can invent, use and modify the development processes needed to cope with change. The author discusses each of these two targets in terms of three general types of changes: (1) changes in external conditions, (2) changes in the organization of work, and (3) changes in the nature of the relationship, the individual and the organization. The importance of problem-solving models in OD efforts is discussed. Five types of non-developmental response to change are described: (1) denial; (2) working harder using the "tried and true" methods; (3) more complexity through the addition of new rules, new functions, new standards, and new positions; (4) management by crisis where executives and problem solvers put together all their energy and creative talent for a massive attack on a crisis situation, and (5) individual or departmental invention.

Hage, Jerald, and Michael Aiken. "Program Change and Organizational Properties: A Comparative Analysis," American Journal of Sociology, LXXII (March, 1967), pp. 503-519.
The authors believe that determining which kind of change results in a change of the organizational system is a major problem. New techniques may be adopted, new models may be tried, and new rules and policies may be formulated; yet, these changes do not necessarily imply fundamental changes in the organizational system. They offer a tentative solution to this problem by limiting analysis to one kind of change within the system, the adoption of new programs or services. This kind of change appears to be an important one, albeit not the only kind, because it can imply changes in techniques, rules, or even goals. They assume that the rate of program change, as well as other organizational properties, can be conceived most advantageously as variables in a system and that a change in one variable leads to a change in another. Their analysis of sixteen organizations indicates that different empirical indicators of the three structural properties of organizations, centralization, complexity, and formalization, are related differentially to the rate of change of new programs.

Harrison, Roger. "Choosing the Depth of Organizational Intervention," The Journal of Applied Behavioral Science, VI (April/May/June, 1970), pp. 181-202.
The author emphasizes the need for conceptual models which differentiate intervention strategies from one another in a way which permits rational matching of strategies to differing organizational change problems. He offers the following list of change strategies in order of increasing depth of individual emotional involvement in the change process: operations analysis, management by objectives, the Managerial Grid, the T or Sensitivity Group, and task group therapy. Several criteria for the depth of intervention are presented.

Havighurst, Robert J. "The Reorganization of Education in Metropolitan Areas," Phi Delta Kappan, LII (February, 1971), pp. 354-358.

The author makes three general recommendations for the organization of school systems in metropolitan areas:

1. Increase the options of parents and children with respect to education. This means that there should be a variety of educational offerings, attractive to the variety of persons and interest groups in the community.
2. Delegate substantial responsibility to local community groups for the local schools. School principals are now considering seriously and constructively how they can work with local school advisory boards in a number of cities.
3. Increase the amount of cooperation among school districts in the metropolitan area. A metropolitan area council with representation from all school boards in the area should be established, with a budget for educational programs.

Havighurst, Robert J., Frank L. Smith, and David E. Wilder. A Profile of the Large-City High School. Washington, D. C.: National Association of Secondary School Principals, November, 1970.

This document reports on a study of high schools in cities with a population over 300,000, which was commissioned by the National Association of Secondary School Principals (NASSP). The authors did not attempt to describe an "ideal" big city high school nor did they attempt to provide criteria by which to gauge the quality of a given school. However, five procedural recommendations to facilitate more of an interacting, cooperating system are made:

1. A single experimental high school might be established at a central location to serve students from all over the city who want an unconventional secondary education.
2. Faculty members could be shifted for a semester or a year at a time from one type of school to another, thus providing more racial integration and a more equitable distribution of people of maturity and experience among the various types of schools.
3. Students could divide their attendance among two or more schools. This might be done in terms of special interest or competence.
4. An open attendance rule could be administered with the aid of a special counselling office so as to encourage some students of the inner-city area to enroll in comprehensive or middle-class schools where they might find more academic stimulation.
5. Where enrollment is growing and financing is critical, one or more large high schools might be constructed on a kind of educational park to draw students from a wide range of socioeconomic and ethnic status.

Hersey, Paul, and Kenneth H. Blanchard. "Cultural Changes: Their Influence on Organizational Structure and Management Behavior," Training and Development Journal, XXIV (October, 1970), pp. 2-3.

The author suggests two ways that organizational structure and management behavior could respond to cultural changes. The first way involves span of control. In the past the manager's number of subordinates (span of control) tended to decrease as higher levels of management were achieved. It is suggested that span of control should be a function of the maturity and self-control of the individuals being supervised, allowing some organizations to have a narrower span of control at the bottom than at the top. The second possible response is concerned with a change in the role of the manager. The traditional method of management by direction and control is viewed as questionable for motivating people with a higher level of education who tend to be capable of more mature behavior. In addition he needs to be skilled both as a supervisor and as a subordinate, in order to fulfill a linking pin role in the organizational hierarchy.

Hilfiker, Leo R. "Factors Relating to the Innovativeness of School Systems," The Journal of Educational Research, LXIV (September, 1970), pp. 23-27.

It was found that the following independent variables were significantly related to school system innovativeness: (1) social support provided by the principal as perceived by the professional personnel; (2) the perceived problem-solving adequacy of staff meetings; (3) satisfaction with the amount of time devoted to problem solving in staff meetings; (4) perceived powerlessness in system faculty and administrative council meetings; and (5) openness and trust as interpersonal norms of the system as perceived by professional personnel.

Janowitz, Morris. Institution Building in Urban Education. Hartford, Conn.: Russell Sage Foundation, 1969.

The purpose of the author's analysis is to explicate sociological concepts that might help in the organizational transformation of education. He feels that the evaluation of the "More Effective Schools Program" in New York City, and a great variety of other such programs, helped to bring the first phase in "inner city" experimentation to an end. This first phase, roughly designated from 1960 to 1967, emphasized piecemeal change, the demonstration project, and the process of change from the bottom up or by lateral diffusion. The author feels that the whole first phase might well have been avoided or more readily terminated by more rational analysis and more forthright leadership. In the author's view, the emerging second phase is that of strategic innovation or institution building, which focuses on the system as a whole. It involves a strategy from the top down, is more comprehensive in

scope, and is concerned with the realities of authority and decision making. Two models for institutional building, the specialization model and the aggregation model, are discussed under the following headings: (1) strategy of change, (2) organization goals, (3) division of labor, (4) investment pattern, (5) organizational format, (6) authority structure, (7) curriculum construction, (8) grading system, (9) school districts, (10) principal's role, (11) teacher's role, (12) classroom management, (13) teaching style, (14) subprofessionals and volunteers, (15) psychology of learning, (16) control of deviant behavior, (17) evaluation, (18) new media, (19) community contacts, (20) teacher education, and (21) inservice training. The author prefers the aggregation model.

Jenks, Stephen R. "An Action-Research Approach to Organizational Change," The Journal of Applied Behavioral Science, VI (April-May-June, 1970), pp. 131-148.

This study is concerned with the development, testing and application of a research instrument based on bringing about organizational change by changing the interpersonal relations of the organization's members, designed for use in organizational settings as an integral part of organization change and development efforts. The instrument, an organizational Q-sort, was designed and developed to provide systematic data about interpersonal relationships. The application of the instrument in an organizational field setting is examined and evaluated. The primary strengths of the instrument appeared to be the specificity and clarity of the interpersonal data yielded, its relevance to ongoing problems experienced by the organizational unit, and its ease of administration and interpretation. The primary weaknesses were that the instructions focused the instrument on too specific a problem and that the instrument may have been too heavily oriented towards interpersonal relations.

Jones, Richard V. "Tuning Up the Staff for Organizational Change," Secondary Education, XLIV (December, 1969), pp. 339-346.

The author suggests six steps which seem appropriate to any major organizational innovation: (1) the examination of present practices; (2) the clarification of purposes; (3) the examination of new models; (4) the development of new skills; (5) the protection of change; and (6) the feedback for growth. He lists the steps on the assumption that the standard conditions for organizational change are operational. Three of the standard conditions are as follows: (1) an atmosphere of freedom which encourages thoughtful experimentation; (2) an organizational hierarchy which not only values competence but also assumes competence in all staff members; and (3) an organization in which decisions are made as close to the operational level as is possible.

Lawrence, Paul R., and Jay W. Lorsch. Developing Organizations: Diagnosis and Action. Reading, Mass.: Addison-Wesley Publishing Company, 1969.

An organization is defined as the coordination of different activities of individual contributors to carry out planned transactions with the environment. With regard to organization development, the authors focus on three critical interfaces: (1) the organization-environment interface, (2) the group-group interface, and (3) the individual-organization interface. The differentiation and integration (D & I) model, which provides a set of concepts which enable an understanding of what characteristics an organization must have to be effective in a particular set of environmental circumstances, is used along with behavioral science tools and concepts to provide a way of understanding possible solutions to problems at the three critical interfaces. This forms a basis for the author's model of organization development, which consists of the following four stages: (1) diagnosis, (2) action planning, (3) implementation, and (4) evaluation.

Lippitt, Gordon L. "Success is Organizational Renewal," Association Management, XXII (January, 1970), pp. 39-41.

The author describes six stages of growth which all organizations go through as they move from birth to maturity: (1) creation, (2) survival, (3) stabilization, (4) gaining a reputation and developing pride, (5) the achievement of uniqueness and adaptability, and (6) contribution to society. He explains that the process of organization renewal requires three phases: (1) confrontation, (2) search, and (3) coping.

Maguire, Louis M. Feasibility Study and Analysis of the Administrative Management of the Harrisburg City School District. Philadelphia: Research for Better Schools, Inc., April, 1970.

This report contains five main sections. In the first section, the design of the feasibility study and analysis is explicated. The second section portrays nineteen generalizations which were derived from the feasibility study and analysis and which characterize the current administrative structure and operation. In the third section, Research for Better Schools (RBS) presents its recommendations to Harrisburg for administrative reorganization. The thrust of the recommendations is that Harrisburg adopt the Superintendency Team concept as a major step toward organizational improvement. In the fourth section, RBS outlines the recommended processes for implementing and operationalizing the Superintendency Team concept. In section five, an attempt is made to describe the major factors that will determine how much Harrisburg will expend for the recommendations if it understands, is committed to, and adopts them.

Miner, John B. "Bridging the Gulf in Organizational Performance," Harvard Business Review, XLVI (July-August, 1968), pp. 100-110.

The author uses integration theory to develop guidelines for organizational change. His approach to improving organizational effectiveness differs somewhat from the principles of management that have traditionally guided organizational planning.

Mohr, Lawrence B. "Determinants of Innovation in Organizations," American Political Science Review, LXIII (1969), pp. 111-126.

The author attempts to identify the determinants of innovation in public agencies, specifically in local departments of public health. He suggests that innovation is the function of an interaction among the motivation to innovate, the strength of obstacles against innovation, and the availability of resources for overcoming such obstacles. He found that size was by far the most powerful predictor of innovation, but cautions that size should be expected to predict innovation only insofar as it implies the presence of motivation, obstacles and resources.

Myers, Frank E. "Civil Disobedience and Organizational Change: The British Committee of 100," Political Science Quarterly, LXXXVI (March, 1971), pp. 92-112.

The author investigates the disparity between normal patterns of organizational development and the pattern of organizational development exhibited by protest movements, or groups, which adopt civil disobedience as a tactic. The following reasons are given as explanation for this disparity:

1. Groups adopting illegal actions as explicit tactics normally originate as factions of larger protest organizations.
2. Groups employing illegal tactics tend, with the passage of time, to draw younger, rather than older persons into positions of leadership.
3. Groups employing civil disobedience are likely, at least in the eyes of their followers, to fall below expectations in achieving their aims.

Purdy, Ralph D., and David Hutcheson (eds.). Planning for School District Organization. Lincoln, Nebr.: The Great Plains School District Organization Project, May, 1968.

Briefs of fifty-six position papers and eight related reports which were prepared for the Great Plains School District Organization Project, a project designed to plan for the future organization of school districts in a four state area, are presented.

Sanders, Donald P. "Toward a Theory of Educational Development," Comparative Education Review, XIII (October, 1969), pp. 276-293.

The author attempts to define development, to propose a model for educational systems which permits identification of system variables and criteria for judging whether development occurs, and to suggest a measurement method for studying the development of an important, but commonly overlooked, variable. Development is seen as a process of change which occurs in things which are, or may be conceived of, as systems. Change is considered development only if some person perceives it as developmental, as movement in a positive direction.

Schein, Edgar H. Process Consultation: Its Role In Organization Development. Reading, Mass.: Addison-Wesley Publishing Company, March, 1969.

The author emphasizes that every act on the part of the process consultant constitutes an intervention, even the act of deciding to work with an organization or of diagnosis. He suggests the following broad categories of interventions which a process consultant might make: (1) agenda-setting interventions, (2) feedback of observations or other data, (3) coaching or counseling of individuals or groups, and (4) structural suggestions. He contrasts process consultation with more standard kinds of consultation models. In standard consultation models, the consultant gives expert advice on how to solve a particular problem which the organization has identified and is concerned about passing on his knowledge, whereas in process consultation it is assumed that the organization does not know how to use its own resources effectively either in initial problem solution or in implementation of solutions and the process consultant is concerned about passing on his skills and values.

Schmuck, Richard A., Philip J. Runkel, and Charles Blondino. Organizational Specialists in a School District. Eugene, Oreg.: Center for the Advanced Study of Educational Administration, University of Oregon, October, 1970.

The authors describe an attempt to create the role of organizational specialist in a school district, a role concerned with improving communication patterns, group processes and organizational procedures. They indicate that there are at least two effective change strategies which a school district can adopt when faced with organizational tensions: (1) modify programs by experimenting with successful practices from outside the district; and (2) build new norms and procedures that enable district personnel to monitor the changing community, to compare what they see happening with what the district's goals imply ought to happen and to establish new organizational forms whenever the movement

toward a goal falls below a criterion. They believe that both of these strategies gain in power when they are used in tandem. They argue that capabilities for self-renewal can be enhanced through development of a cadre of organizational specialists. These specialists should be given organizational training which places emphasis upon: (1) increasing understanding on the part of members of the district of how people in different parts of the total district affect one another; (2) developing clear communication networks, up, down, and laterally; (3) increasing understanding on the part of members of the district of the various educational goals in different parts of the district; and (4) involving more personnel at all levels in decision making. When trained, those specialists can produce a lively ability for self-renewal by following these guides:

1. by diagnosing the discrepancies that exist between the district's goals and its actual organizational performance.
2. by assessing the levels of role clarity in the district.
3. by checking on the flow of communication in the district.
4. by assessing the extent to which the district has a repertoire of interpersonal techniques that aid collaboration in small task-groups.
5. by assessing the variety of human resources available for solving problems in the district.
6. by assessing the means by which the district selects some innovative activities to be maintained and others to be rejected.
7. by assessing the methods the district uses for institutionalizing innovations after they have been judged suitable and worth keeping.

As a result of their experience in organizational training, the authors indicate that the following are preconditions for a successful cadre of organizational specialists:

1. All significant role groups within a district should be involved in defining objectives and delineating problems.
2. A vertically organized group of persons of high influence should attend a short training event in which organizational training techniques are demonstrated.
3. This high-influence group should form a steering committee for the project from a subgroup of itself.
4. The specialists should experience intensive initial training of two or three weeks in which they learn how to perform as group facilitators.
5. The cadre of specialists should try out their training skills in the district under the guidance of outside consultants.

The authors suggest that outside training consultants who intervene in a school district should organize their work in three stages: (1) improving communication skills, (2) changing norms, and (3) structural change.

Schmuck, Richard A., Philip J. Runkel, and Daniel Langmeyer. Theory To Guide Organizational Training In Schools. Technical Report No. 3. Eugene Oreg.: Center for the Advanced Study of Educational Administration, University of Oregon, July, 1970.

The authors differentiate between the goals of personal development typical in the sensitivity training group and the goals of organizational development which organizational training is designed to achieve. While the primary goals of sensitivity group training are learning the cognitions, attitudes and skills of constructive openness, organizational training seeks to increase the effectiveness of groups as task-oriented entities and tries to lead participants to function more effectively as components of working bodies carrying out specific tasks in that particular job setting. The authors present four postulates as basic to their theory of school organization:

1. Schools are made up of basic units referred to as components. The people and the curriculum are the most prominent components.
2. Schools are goal directed.
3. Schools display some degree of openness and adaptability.
4. Schools are constituted with many resources within their subsystems and components that at any one time are not being used.

Using the sociological concepts of norm and role and the psychological variables of emotional styles as guides for organizational training intervention, the authors describe the following seven goals of organizational training, and present some examples of skills and actions that are related to each goal:

1. Increase understanding of how people in different parts of the total school system affect one another. Skills: collecting data using questionnaires, interviews, and observations, etc. Actions: setting up feedback sessions within the school, etc.
2. Develop clear communication networks up and down and laterally. Skills: using communication skills such as paraphrasing, behavior description, etc. Actions: arranging for communication-skills workshops within the school, etc.
3. Increase understanding of the various educational goals in different parts of the school organization. Skills: writing behavioral objectives and specifying outcomes using operational definitions, etc. Actions: collaborating with appropriate specialists in bringing various groups in the district together to discuss objectives, etc.

4. Develop new ways of solving problems through creative use of new roles in groups. Skills: using several problem-solving sequences with groups, etc. Actions: training various groups in the school district to use conscious routines of group problem-solving. Groups such as department heads, committees, team teaching, and departmental units could receive such training.
5. Develop new ways of assessing progress toward educational goals in the school. Skills: seeking technical assistance from researchers on ways of collecting evaluative data, etc. Actions: collaborating with workshops systems analysis (for example) and with the teachers' associations.
6. Involve more people at all levels in decision-making. Skills: using communication skills for increasing participation in small groups and using organizational confrontations for reducing unproductive distance between hierarchical levels, etc. Actions: diagnosing influence processes from own vantage point in the district, sharing these diagnoses, and developing plans for involving others in constructive problem-solving, etc.
7. Develop procedures for searching out innovative practices both within and outside the school. Skills: observing for frustrations and dissatisfactions in the school wherever goals are not being reached and identifying creative practices wherever they are occurring, etc. Actions: setting up meetings to help bring together the frustrated and the creative, whether the latter be inside or outside the district, etc.

Simonds, Rollin H. "Is Organization Structure Reflecting New Techniques and Theory?" Michigan State University Business Topics, XVII (Summer, 1969), pp. 65-71.

In a before and after study of organizational change, no evidence was found of any trend of change in span of control or organizational levels attributable to automation, new quantitative techniques, or behavioral research.

Slesinger, Jonathan A., and Ernest Harburg. "Organizational Change and Executive Behavior," Human Organization, XXVII (Summer, 1968), pp. 95-109.

The authors present a case study of a firm undergoing change from a centralized to a decentralized form of organization. The analysis focuses on the generation and effects of behavioral discrepancies in executive role relations that arose with management's omission of deliberate, systematic efforts to change its own behavior.

Thain, Donald H. "Stages of Corporate Development," Business Quarterly, XXXIV (Winter, 1969), pp. 32-45.

The author posits that companies evolve from small and simple to large and complex through three major stages of development: (1) Stage I - one unit and one-man show, (2) Stage II - one unit with a functionally specialized group, and (3) Stage III - multi-unit general office and decentralized divisions. He compares the key factors in top management processes and the general emphases in business functions in State I, II and III companies. He also describes the external and internal blocks to development, and the problems when transition is premature and too late.

Thomas, A. Ross. "Innovation Within a Bureaucratic Education System - Part II," Journal of Educational Administration, VII (May, 1969), pp. 20-36.

Bureaucratic theory, systems thoery, and a review of research on innovation provide a conceptual framework on which seven predictions are posited. The predictions relate to the innovative behavior of a bureaucratic education system throughout a period of twenty years. An innovation is defined as a new structure or process that appeared for the first time in the education system. One hundred and sixty-four innovations are identified and classified as task-oriented, personnel-oriented, and organization-oriented. The seven predictions are:

1. The annual frequencies of innovation display an upward or increasing trend through the period 1946 to 1965.
2. The educational policies of state governments are distinguished by different rates of innovation.
3. The annual frequencies of innovation throughout the term of office of a Director-General display a downward or diminishing trend.
4. The frequency of innovation will increase following the succession to office of a new Director-General. The maximum annual frequency of innovations adopted will occur later than his first year of office.
5. The frequency of innovation will not increase during the first year of office of a Minister for Education.
6. Innovation will occur least in the central office system.
7. The predominant innovation in the Queensland bureaucratic education system is task-oriented.

Worcester, Robert M. "Planning for Growth in Leading U.S. Companies," Long Range Planning, II (March, 1970), pp. 8-14.

Through surveys focusing on American corporate practice, it was found that executives responsible for long-range planning cite the following five main obstacles to growth: (1) breaking down resistance to change, (2) keeping on top of advancing technology, (3) developing executive manpower, (4) facing competition from new sources, and (5) increasing government regulation. One method for developing organizational vitality is described as decentralization tied to a managed information system. In regard to decentralization, it was found that organizational structures for leading companies have gone through three principal phases of change: (1) centralization of both operating and policy decisions, (2) decentralization of operating decisions and setting up of autonomous profit centers, and (3) recentralization which brings corporate headquarters more into market decision rather than just exercising financial control over decentralized units.

V. ORGANIZATIONAL ENVIRONMENT

Abt, Clark C. "Reforming Urban Education with Cost-Effectiveness Analysis," Educational Technology, X (September, 1970), pp. 36-38.

The author believes that urban educational systems are unlikely to change unless external forces require such changes as conditions for organizational survival. He states that for economic or political market mechanisms to operate on the formal public school system to force internal reforms, three basic conditions must be satisfied:

1. Economic and political alternatives must exist, and have sound economic and political reasons for existing.
2. The consumers of educational services must have information on the alternatives and their relative cost-effectiveness in terms of criteria based on their own priorities.
3. The consumers must be able to exercise control over their own choices of alternatives, because information on alternatives that one cannot exercise is of no use at all.

Alioto, Robert F., and J. A. Jungherr. "Using PPBS to Overcome Taxpayer's Resistance," Phi Delta Kappan, LI (November, 1969), pp. 138-141.

In 1968 the school budget of the Pearl River (N.Y.) School District was twice rejected by the voters. To increase the probability that the next year's budget would not be rejected PPBS was used to increase community involvement in the budget process, explain the budget to the electorate and provide better information for constructing the budget. This innovation was successful in winning voter approval.

Brager, George A., and Valerie Jorrin. "Bargaining: A Method in Community Change," *Social Work*, XIV (October, 1969), pp. 73-83.
Assuming that community change efforts entail the use of bargaining, the authors explore three factors that determine the nature and outcome of a bargaining process: (1) the power resources of the bargainers, (2) the formulation of issues, and (3) skill in the use of strategy. The respective roles of the social worker and the community group in the bargaining transaction are reviewed. Bargaining is defined as a process between two parties the intent of which is to reach an accommodation regarding a disputed issue.

Brown, Charles M., and Helen B. Truher. *Reading: Project Design. Interagency Planning for Urban Educational Needs, Number 10.* Fresno, Calif.: Fresno City Unified School District, 1968.
This report includes the following phases: (1) the development of a comprehensive scope and sequence outline of skills, attitudes, and knowledge in the area of reading; (2) an analysis of the schools, the students, and the community to determine the extent of development of these skills; (3) an assessment of the strengths and weaknesses of present programs and results; and (4) some suggestions for improvement. The procedure involved studying all pertinent district reports, interviewing key personnel and teachers, and observing schools chosen to represent different socioeconomic levels and different racial distributions.

Burnes, Donald W. "Community Controlled Schools: Politics and Education," *Civil Rights Digest*, II (Fall, 1969), pp. 36-41.
The author believes that schools in white, suburban communities are accessible and accountable to the local community. Conversely, there is no such local control of schools in ghetto communities.

Campbell, Alan K., and Philip Meranto. "The Metropolitan Education Dilemma: Matching Resources to Needs," *Educating an Urban Population*, Marilyn Gittell (ed.). Beverly Hills, Calif.: Sage Publications, Inc., 1967.
The authors attempt to distinguish between those educational problems caused by urbanization in America and those caused by other modern phenomena. They cite the growing importance of the suburbs in the significance of population shifts. This importance is reflected in differences in income, education and race. This leaves the urban public school with a disproportionate percentage of problem students and the many urban schools with an "undesirable" rating for parents, teachers and students. The cities themselves, while facing increased needs for educating increased proportions of disadvantaged students, have experienced a decrease in available funds due to the suburbanization of wealthier

families. At the same time the same population redistribution has called for increases in non-educational urban spending for highways, health, welfare, etc. The authors show that a three-fold increase in expenditures for urban education is needed to improve inner-city education. They suggest the redrawing of school district boundaries, the creation of metropolitan educational parks, the resettlement of wealthier families in cities and the increase in fund allocations for the education of the disadvantaged.

Chase, William W. "The Educational Facilities Charrette," Educational Technology, X (June, 1970), pp. 20-21.
The "Educational Facilities Charrette" is described as a technique for studying and resolving educational facilities development problems within the context of total community planning needs. It requires a majority representation of community residents and community leadership direction of a multidisciplinary group intensely studying community problems in open public forum to achieve creative solutions.

Cohn, Jules. "Is Business Meeting the Challenge of Urban Affairs?" Harvard Business Review, XLVIII (March-April, 1970), pp. 68-82.
The author identifies six issues which should be addressed by managers of companies interested in running effective urban affairs programs:

1. The need to arrive at realistic objectives.
2. The need to explore alternative program possibilities.
3. The need to predict and allow for possible side effects.
4. The need to make a realistic inventory of available resources.
5. The need to understand the political and sociological dimensions of urban problems.
6. The need to have workable organizational arrangements.

Coombs, Philip H. The World Educational Crisis. New York: Oxford University Press, 1968.
The disparity between educational systems and their environments is seen as the essence of the world-wide crisis in education. Four specific causes of the disparity are discussed: (1) the sharp increase in popular aspirations for education, (2) the acute scarcity of resources, (3) the inherent inertia of educational systems, and (4) the inertia of societies themselves. Based on his analysis of the educational crisis, the author suggests the following priority targets: (1) modernization of educational management, (2) modernization of teachers, (3) modernization of the learning process, (4) the strengthening of educational finance, and (5) greater emphasis on nonformal education.

Cunningham, Luvern L. "Community Involvement in Change," Educational Leadership, XXVII (January, 1970), pp. 363-366.

The author portrays the several purposes that citizens are seeking to serve through participation in education: (1) to develop community understanding and support for educational objectives; (2) to supplement efforts of school staff members in pursuit of educational objectives, (3) to articulate citizen expectations for schools, and (4) to insist upon accountability for educational objectives.

Cunningham, Luvern L. "The Magnificent Pandora of Decentralization," School Administrator, XXVI (June, 1970), pp. 5-8.

The author feels that the principal consequence of decentralization would be a repositioning of the primary responsibility for educational quality squarely on the shoulders of parents, students, teachers, and local-level administrators.

Cunningham, Luvern L. "A Viable Plan of Decentralization and Community Control." Stanford, Calif.: Center for Advanced Study in the Behavioral Sciences, 1970.

The author states that there is no way to construct a viable decentralization and/or community control format without concerted attention to what he labels design imperatives. Six such imperatives are discussed. The format must (1) be responsive to the participation impulse, (2) lead to improved education, (3) meet the equality of opportunity mandate, (4) accommodate lay-professional antagonisms, (5) be feasible financially, and (6) be achievable politically. The author closes with five prescriptive remarks on innovation and change.

Evaluation of CAP Impact on Organizations. An Interim Report. Cambridge, Mass.: Barss, Reitzel & Associates, Inc., June, 1969.

This report presents preliminary measurements related to an evaluation of a sample of fifty urban Community Action Agencies (CAA) of the Community Action Program (CAP). With regard to urban schools, CAA was seen as having little impact on physical facilities, teacher understanding, teacher-student ratios, the adoption of school system innovations, and the internal workings of schools. They were, however, seen as affecting general but not specific changes in parental activity.

Fantini, Mario, D. "Participation, Decentralization, Community Control, and Quality Education," Teachers College Record, LXXI (September, 1969), pp. 93-106.

The author believes that the parties of interest administrators, teachers, supervisors, students, parents, communities, et al., all want to see the schools updated and made relevant, but have been tragically sidetracked into conflict by the form and shape of the institution and the institutional environment. He feels that this is a fantastic waste of energy which can be mobilized to generate the power necessary for school reform, and provides a rationale in defense of the emerging participatory movement. He states that it is difficult, if not impossible, for those trying to keep the present system running to serve also as the major agents of institutional change. Other legitimate parties are needed, and parents and students are seen as legitimate parties of the school. The author identifies three major pillars of the present educational system which must be altered if fundamental change leading to a new and more relevant educational institution is to really happen:

1. Governance - realigning the parties involved in the process of educational decision making so that parents, community residents and students are given an increased voice in policy.
2. Substance - looking at the objectives to be achieved and the content to be learned in the search for relevance toward a more humanistically-oriented curricula dealing with individual and group problems and towards a more functional emphasis.
3. Personnel - opening the system to a far broader base of talent than the conventionally-prepared career educator, and training through the reality of community needs and expressions.

Fascione, Daniel R., and William P. Herron. "Projecting School Enrollments: A Research or Political Process?" Paper presented at the Annual Meeting of the American Educational Research Association, New York, February, 1971.

The technical problems of enrollment forecasting are complicated by the presence of political pressures: principals do not wish to see their schools downgraded, teachers do not want their colleagues transferred, neighborhood populations are changed by political decisions on where to build highways, citizen groups pressure for or against building new schools, politicians promise to reduce school spending. All these groups have been successful in forcing the modification of scientifically-derived population forecasts. This in turn leads to inaccurate forecasts.

Fliegel, Frederick C. "Community Organization and Acceptance of Change in Rural India," Rural Sociology, XXXIV (June, 1969), pp. 167-181.

The author found that cleavages within a village in India, evidenced by religious diversity and factionalism, were not a major factor in the success of a change program dealing with agricultural modernization.

Fryer, Thomas W. "Miami-Dade's Mini-Charrette," CEFP Journal, VIII (July-August, 1970), pp. 20-22.

An application of the charette concept, a planning technique emphasizing participation from a broad spectrum of community life, is described.

Guskin, Alan E., and Robert Ross. "Technocracy, Advocacy, and Democratic Strategy," American Journal of Orthopsychiatry, XL (March, 1970), pp. 211-212.

Two related reform-oriented responses to the problems of contemporary urbanism and urban government are described. One is the concept of community control, where it is thought that by devolving power and authority, in some cases, to the neighborhood level, citizens' interests would be weighed in the decision-making process. The other is the notion of advocacy for the community on the part of professionals who are responsible to the community, not to an agency of the city government or other groups.

Gustafson, Thomas J. "Variables Which Affect the Success of Educational Pressure Groups." Paper presented at the Annual Meeting of the American Educational Research Association, Minneapolis, March, 1970.

The author found eight variables operating in the activity and effectiveness of educational pressure groups: (1) the critical situation in the community which caused the pressure group to become active; (2) the quality of leadership of the pressure group; (3) the prestige of the pressure group within the community; (4) the economic control the pressure group commanded within the community; (5) the channels of communication of the pressure group with influential decision-makers; (6) the shared goals and attitudes the pressure group had with the community at large; (7) the group solidarity; and (8) the strategy the pressure group would implement to achieve its objectives.

Herriott, Robert E., and Benjamin J. Hodgkins. "Social Context and the School: An Open-System Analysis of Social and Educational Change," Rural Sociology, XXXIV (June, 1969), pp. 149-166.

The authors' view is that the underlying feature of the relationship between modernization and education is the dependence of technological development on the social institution of formal education; a dependence important not only in terms of the transmission of knowledge, but also in terms of the development of an instrumental orientation amenable to the implementation of the knowledge. They expect schools in the more modern sectors of American society to have more complex structures consistent with a more highly specialized division of labor among their membership. Conversely, schools in more traditional areas are expected to be less specialized and to evidence a greater permeability from their local sociocultural environment. They argue that the community probably permits the school to be a change agent only to the extent that it wants to be so changed. They suspect that until the local environment which supports, maintains and controls the American public schools can be changed, little widespread change can be made in the structure of the school itself.

Hochbaum, G.M. "Consumer Participation in Health Planning: Toward Conceptual Clarification," American Journal of Public Health, LIX (September, 1969), pp. 1698-1705.

The article discusses some problems that arise from consumer participation in planning. The consumer should participate both in the planning process and in the decision-making process and this gives rise to conflicts between professionals and community desires. The author sees the burden of blame for such conflicts to be the duty of the professionals to assume. Another problem arises in determining who is to be considered to be a consumer, with rights to planning participation.

Kelly, James A. "Priorities in Urban Education." Paper presented at the Conference on a National Agenda for American Education, Washington, D. C., July, 1969.

The author believes that school governance in cities is an archaic patchwork of unresponsive bureaucracy so dominated by habit and custom that reform is unlikely without extreme external threats to the institution. He suggests that educators in urban areas should strongly support increased community involvement and participation in school affairs.

Kohn, Sherwood D. "Experiment in Planning an Urban High School: The Baltimore Charette." New York: Educational Facilities Laboratories, November, 1969.

This document describes the activities of the Dunbar Charette, which included participants from the surrounding community, school district personnel, and architects, in planning a highly sophisticated concept of an inner city high school.

Luszki, Margaret R., and Richard Schmuck. "Pupil Perceptions of Parental Attitude Toward Schools," Mental Hygiene, XLIX (April, 1965), pp. 296-307.

The authors examine the relationship between a child's achievement efforts in school and his parents' attitudes toward school. In addition, they postulate that the child's perception of these attitudes is more crucial for his behavior as a pupil than the attitudes themselves. Data were collected on familiar social class, parental education, maternal employment, peer interpersonal affective relations, utilization of abilities and self-esteem. A clear relationship was found between the parents' educational level and whether they were seen as supportive of school by their children. The study isolated three general types of pupil perceptions of parental attitudes toward school: affective support and approval; offer of help and active support; and emphasis on academic achievement. The authors conclude with some implications for teachers.

Lyndon, Benjamin H. "Change and Social Work Education's Reaction: Evolution or the 'Big Bang' Approach?" Public Welfare, XXVII (April, 1969), pp. 125-134.

The author emphasizes that whereas five years ago lip service was offered about involving the recipient in planning the services he received, today no modern administrator would think of not actively involving such recipients. He also stresses that schools should be changing based upon strength and security in what is known, not as an escape from weakness and ignorance.

Nystrand, Raphael O. "The Study of School-Community Relationships in Urban Settings: A Discussion of the Methods Employed in the Cincinnati, Columbus, Detroit, and Washington, D. C. School Surveys." Paper presented at the Annual Meeting of the American Educational Research Association, Los Angeles, February, 1969.

Data from three cities provide little evidence of widespread public dissatisfaction with schools and/or strong grassroots demand for changes. The author suggests that the wish to restructure school systems to provide greater community control is presently shared by a minority of activists, consultants, and journalists.

Oliver, C. Herbert. "Community Control and Control of Community Groups," APSS Know How, XXI (January, 1970), pp. 1, 4.

The author believes that the deep fear of local government must be eradicated before local self-government can become a reality.

Pearce, Lucia. "Environmental Structure: A Third Partner in Education," Educational Technology, VIII (September, 1968), pp. 11-14.

This article discusses the effects of the physical environment on the results of the educational process. The traditional physical arrangement of the furniture in a classroom is said to impose restraints on the type of teaching possible there. A more flexible environment is suggested in order to promote the self-actualization of students through education.

Shepard, Samuel. "Instructional Planning for the Urban Setting," Urban School Administration, Troy V. McKelvey and Austin D. Swanson (eds.). Beverly Hills, Calif.: Sage Publications, 1969.

This chapter reports on the St. Louis plan for improving the educational achievement of disadvantaged children in the city's Banneker District. The author reviews the problems involved in educating slum children and recounts some of the methods and achievements of the plan. It would seem from the author's narrative that a considerable part of the plan's success was due to a realistic evaluation of the students' needs and an enthusiastic response from their parents and the community for assisting in dealing with the practical problems of educating slum children. The central administrative role was given to the school principals. The author seems to feel that most of the blame for the situation in the district should be placed on the teacher's attitudes and he (as administrator of the district) assigns to the teachers most of the after-hours work necessitated by the plan.

Steele, Marilyn. "Humanizing Schools: The Community School Planning Process," CEFP Journal, VIII (May-June, 1970), pp. 8-11.

The Community School is seen as educating both children and adults in multi-purpose recreational facilities which may include K-12 instructional programs, adult education, youth enrichment and recreation, adult job training and re-training, center for community services, and others. It is planning by community-selected representatives, and is designed to meet the needs of the people, the community, and the times. The author describes a model for planning community school facilities. The model has the following three general phases: (1) research phase, which includes (a) establish planning team for community school facility, (b) define initial planning, and (c) organize community resource needs; (2) charette phase, which includes (a) the charette, (b) determine local needs, and (c) develop community goals; and (3) design phase, which includes (a) community planning team, (b) design the program, and (c) design the facility.

Speak-up; A Sub-Project Assessing Educational Needs as Perceived by the Community: PROJECT DESIGN. Interagency Planning for Urban Educational Needs, Number 2. Fresno, Calif.: Fresno City Unified School District, May, 1968.

This document contains the findings of research designed to involve a cross-section of Fresno, California citizens in educational planning and to identify educational needs perceived by the "grassroots" of that community. The findings, gathered from reports of small-group discussion sessions, each with an average of seven participants, are specified by frequency of response in the following major categories: (1) educational activities requiring more or less emphasis, (2) major educational problems, (3) locus of responsibility for teaching moral and ethical values, (4) education for job or career skills, (5) student guidance-counseling programs, (6) minority group and adult education, (7) student activity programs, (8) school-community relationship, (9) strengths and weaknesses of the educational system, and (10) general concerns. The appendix contains copies of instructions given to discussion leaders and three typical summary reports of discussion.

Stimbert, E. C. "Political Confrontation," The School Administrator, (March, 1971), pp. 7-10.

The author believes that schools can no longer be insulated from the political life of the community and the nation. Administrators are urged to confront the politicians head-on and to learn the necessary techniques. He recommends that teachers be considered as allies in this process and that administrators not allow politicians to encourage and utilize differences in agreement between the two groups of educational professionals. The community is seen as a third possible ally, so that good public relations is recommended. Officials of the federal government, including congressmen, are discussed as a fourth group that might stand up to local politicians for the good of the schools. The author calls for dynamic and constructive administrative militancy.

Stuart, A. J. "The Affective Domain," NSPI Journal, IX (September, 1970), pp. 9-10.

This paper sketches the results of a one-year program in the El Paso schools to deal with the narcotics problem by involving parents and churches in the common effort.

Weinberg, Meyer. "Educational Bureaucracy and Educational Change," Integrated Education, VII (September-October, 1969), pp.39-48.

The author contends that the bureaucracy is not necessarily a bar to educational change; that the bureaucracy expresses the views of dominant community forces, and thus is not insulated from them; and that it is highly responsive and accountable to those forces.

Wilder, David E., et al. "Actual and Perceived Consensus on Educational Goals Between School and Community." New York: Bureau of Applied Social Research, Columbia University, December, 1968.

This report stresses the fact that different segments of the population expect different things from the same schools, and it proposes that the schools become integrated with their students' families. It assumes that schools exist to conserve and transmit the culture's values and traditions and claims that perceived differences of opinions are more disruptive of the educational process than are actual differences. Statistics are presented on school-type preferences. It is shown that mothers emphasize intellectual and scholastic progress, teachers prefer to accent personal growth, and students in general want a good practical education. The authors believe that the primary reason why the schools survive this difference in emphasis is that each group believes the other groups agree with it.

VI. ORGANIZATIONAL PROCESSES

Abbott, Max G. "Programmatic Research and Development on Innovativeness and the Organizational Attributes of Schools." Paper presented at the Annual Meeting of the American Educational Research Association, Los Angeles, February, 1969.

Abbott makes the point that even with restructuring of schools, which is viewed as necessary, the following problems of organization will remain: coordination in the educative process, maintenance of the enterprise through time, efficient distribution of decision-making responsibilities, effective connection with institutions on which the enterprise depends, and retention of an optimum level of flexibility so that the organization may incorporate still more promising instructional procedures. A framework which posits three levels or dimensions of variables for analysis of innovativeness and the organizational attributes of schools is described. The three levels or dimensions are structural, socio-cultural, and social-psychological.

Baker, Frank. "An Open-Systems Approach to the Study of Mental Hospitals in Transition," Community Mental Health Journal, V (1969), pp. 403-412.

The author presents a framework for the study of a changing hospital organizational system and its relations to the community, based on the concepts of open-systems theory. In evaluating the functioning of a state mental hospital going through the transition of becoming a community mental health center, the author focuses not only on the intra-organizational processes of the changing hospital, but also on the exchanges and transactions between the hospital and the environment, and the processes and structures through which parts of the environment are related to one another.

Bennis, Warren. "Theory and Method in Applying Behavioral Science to Planned Organizational Change," Journal of Applied Behavioral Science, I (1964), pp. 337-360.

The author surveys the ways in which industrial organizations traditionally attempt to apply knowledge. His classification is as follows: (1) exposition and propagation, (2) elite corps programs, (3) human relations training, (4) staff programs, (5) scholarly consultation, (6) circulation of ideas to the elite, (7) developmental research, and (8) action research. He discusses each of these approaches in terms of four biases: (1) rationalistic bias, (2) technocratic bias, (3) individualistic bias, and (4) insight bias.

Berger, Joseph, Thomas L. Conner, and William L. McKeown. "Evaluations and the Formation and Maintenance of Performance Expectations," Human Relations, XXII (December, 1969), pp. 481-502.

The authors are concerned with isolating and conceptualizing one of the processes which operates in the formation and maintenance of performance expectations. It is a process in which performance expectations are conceived of as emerging from, and being maintained by, the evaluations of performances which individuals make in task-oriented situations, and is referred to as the evaluation-expectation process.

Clarke, James W. "Environment, Process and Policy: A Reconsideration," American Political Science Review, LXIII (December, 1969), pp. 1172-1182.

The author states that two ideas emerge from the case and aggregate studies of public policies in cities. First, case studies suggest that political variables are important determinants of public policy and that political decision making and interaction processes are the key variables which must be studied to understand policy outcomes. Second, aggregate comparative studies on the state and local levels indicate that policy outcomes are more closely associated with the social and economic characteristics of the unit of analysis and suggest that environmental rather than political variables appear to be more

important as policy determinants. The author attempts to determine the correlates of variously defined dependent variables which measure different dimensions of structural change or reformism. His analysis shows that, in general, the relative importance of environmental variables declined when political process variables were considered simultaneously in the analysis of referenda outcomes. He concludes that environmental variables are not unimportant, but their importance must be assessed in combination with relevant and meaningful political variables.

Day, Virgil B. "Managing Human Resources in the Seventies," Personnel Administration, XXXIII (January-February, 1970), pp. 5-7, 23-28.

A whole new range of challenges in both the economic and social expectations of society may not be successfully met unless those responsible for the management of human resources assume a greater level of responsibility in the decision-making process of the organization.

Elboin-Dror, Rachel. "Some Characteristics of the Education Policy Formation System," Policy Sciences, I (Summer, 1970), pp. 231-253.

This paper examines some of the distinctive features of the educational policy formation system. First, the formal goals of education are discussed and their relation to the policy formation system is examined. The main characteristics reviewed are problems caused by the intangibility of many educational goals; mean-ends relationships; the inconsistency of educational goals; priority ordering of goals and weighting of educational goals; and the cost of goals. The second section discusses environmental influences on policy formation, emphasizing the dominant role of the environment in policymaking and its influence on other characteristics of the education system. In the third section, the influences of internal actors on education policy formation are analyzed, especially the influences of teachers and managerial apparatus. The fourth section examines decision-making processes in education. They are characterized by a lack of feedback; limited use of analysis and limited search for alternatives; incremental change as the main pattern of decision-making; wide discretion and the need for heuristic methods. The last section is devoted to a normative review of analytical approaches to education policy formation and a critical examination of their potentialities and limitations.

Flizak, Christopher W. "Organizational Structure and Teacher Role-Orientation," Administrator's Notebook, XVIII (October, 1968), pp. 1-4.

It is stated that every organization concerns itself with three major factors: (1) structure, (2) process, and (3) end-product. The author compares three models: (1) authoritarian - emphasizing structure; (2) rationalistic - emphasizing process; and (3) humanistic - emphasizing end-product.

Griffiths, Daniel (ed.). "Developing Taxonomies of Organizational Behavior in Education - Final Report." New York: New York University, April, 1968. (ED 021 339)

A detailed decision-making based classification schema is presented, with accompanying definitions.

Hanan, Mack. "Corporate Growth through Internal Spin-outs," Harvard Business Review, XLVII (November-December, 1969), pp. 55-66.

Breakthrough research and development (R & D) is acknowledged to be a failure-oriented function in that the odds against innovative success are 9-to-1, or as low as 6-to-1. Explaining this state of affairs, the author states that R & D is often stifled by the corporate climate and that few R & D functions are intimately harmonized with market needs, priorities, and knowledge.

Hopkins, John E., and Blaine R. Worthen. "Change in Public Schools," SEC Newsletter, I (May, 1967), pp. 1-4.

The authors assert that the primary function of any internal change mechanism is to allow a school system continually to: (1) assess its efforts, (2) determine what changes are necessary, (3) determine how they can be achieved, and (4) put them into practice. Three considerations are emphasized for local school districts that are interested in developing internal change mechanisms:

1. When developing internal change mechanisms and preparing personnel, keep in mind the values that the district maintains.
2. The change mechanism must be oriented toward problems that the district can do something about.
3. Make sure that the persons to be served by the internal change mechanism understand the proposed changes.

The authors conclude with the suggestion that self-training for public school personnel as change agents is needed.

Immegart, Glenn L., and Francis J. Pilecki. "Assessing Organizational Output: A Framework and Some Implications," Educational Administration Quarterly, VI (Winter, 1970), pp. 62-76.

The author believes that organizational output analysis has important advantages over other modes of organizational assessment, such as structual analysis, goal analysis or interaction analysis. He proposes criterion measures for four output dimensions: (1) productivity--product utility and services utility; (2) integration potential--self-actualization, group decision making, and an individual's flexibility to change; (3) organizational health--adaptability, identity sense, and capacity to test reality; and (4) feedback--desirability of feedback and penetration of feedback. He emphasizes that organizational output analysis suggests a change orientation by organizations.

Jensen, Gale Edward. Problems and Principles of Human Organization in Educational Systems. Ann Arbor, Mich.: Ann Arbor Publishers, May, 1969.

The author looks at educational organizations from two basic perspectives: (1) functions, values, norms, roles, activities, rules, and authority that arise in connection with establishing and maintaining the productivity of the system, and (2) functions, values, norms, roles, activities, rules, and authority that protect the system against influences from within and without that disrupt its operation and/or threaten its continued existence (organizational security). He feels that the balancing of these two organizational factors is a major policy problem for educational systems, and that the particular organizational form which emerges will be greatly influenced by the specific policy decisions which are made about the way these two factors should be balanced. Bureaucratic organization is viewed as effective with respect to repressing conflict, but it does not appear to be especially effective at resolving it.

Mason, R. Hal. "Developing a Planning Organization," Business Horizons, XII (August, 1969), pp. 61-69.

The author sees three major reasons for the failure of corporate long-range planning to carry a firm to success: (1) lack of total commitment to and appreciation for planning at the highest level; (2) failure to devote sufficient resources; and (3) failure to allow the planning organization to grow to maturity. He outlines five phases of development as representative of the patterns followed by large and often successful firms: (1) use of a planning committee at the top management level; (2) formulation of the first formal long-range plan; (3) establishment and use of divisional planning committees in operating units; (4) expansion of the planning group itself and research task groups, and development of performance evaluation and control procedures; and (5) emphasis on corporate development activities.

O'Brien, Gordon E., and A. G. Owens. "Effects of Organizational Structure on Correlations Between Member Abilities and Group Productivity," Journal of Applied Psychology, LIII (1969), pp. 525-530.

Citing two studies, the authors find that the contribution of member ability to group productivity is dependent on both the ability of the member and the kind of task organization employed by the group. They feel that task-relevant abilities are significantly related to group productivity only in those task organizations requiring coordination, and then only for the summed abilities and the abilities of the dullest member of each group. They suggest that the assignment of individuals to groups should be made after consideration of their abilities, the ability of other group members, and the type of task organization.

Parr, Arnold R. "Organizational Response to Community Crises and Group Emergence," American Behavioral Scientist, XIII (January-February, 1970), pp. 423-429.

The author examines the nature of organizational response during crisis that creates conditions conducive to the emergence of new groups. He argues that group emergence is one means through which community social systems cope with crises.

Riggs, Norman D. "Organization for Instruction," The Clearing House, XLIX (September, 1969), pp. 45-49.

The author attempts to obtain an overview of organizational practices and trends by discussing data derived from a sample of schools engaged in administrative innovations.

Schutz, Richard E. "Conducting Research in School Systems." Paper presented at the International Reading Conference, Boston, April, 1968. (ED 027 149)

The author outlines a solution to the problems of conducting research in schools under the following headings: (1) formulation, (2) instructional specifications, (3) component preparation and tryout, (4) product preparation, (5) quality verification, and (6) operations analysis.

Thelen, Herbert A. "Urban School Systems," Phi Delta Kappan, XLVIII (March, 1967), pp. 327-328.

The author emphasizes that the quality of process depends on the quality of behavior, its affective and attitudinal loading.

Vollmer, Howard M., et al. "Organizational Design--Process and Concepts." R & D Studies Series. Menlo Park, Calif.: Stanford Research Institute, December, 1968.

This report, the second of a three-part series, examines ten recent or ongoing examples of organizational design activities to provide a basis for further specification of design strategies, basic steps in the design process, and conceptual tools connected with these steps. The four major components of the organizational design process are: (1) diagnosis of organizational goals and problems, (2) analysis and resynthesis of organizational structure, (3) implementation of organizational design, and (4) evaluation of organizational design.

Williams. D.J. "A Study of a Decision Model for R & D Project Selection," Operational Research Quarterly, XX (September, 1969), pp. 361-373.

Any business organization needs to devote some of its effort and resources to activities which are directed towards ensuring the continuation of the organization's operations in the face of changing demands from the environment. The author believes that such activities should consist, to a large extent, of research and development to create new products and processes which are considered to be of benefit to the future viability of the organization.

SECTION FOUR
PLANNING FOR CHANGE

I. SYSTEM WIDE PLANNING

1. Comprehensive Planning

Brooks, Richard D. "Comprehensive Planning in State Educational Agencies: A Rationale and Discussion of the Planning Function and Structure within State Education Agencies." Madison: Wisconsin State Department of Public Instruction, December, 1968. (ED 031 042)

Comprehensive planning is described as consisting of the following elements: (1) establishment of goals and priorities, (2) development of courses of action to meet established goals, and (3) evaluation.

Casasco, Juan A. Planning Techniques for University Management. Washington, D. C.: American Council on Education, 1970.

The author believes that modern planning techniques are necessary to the management of the modern university and proposes a comprehensive long-range planning approach to replace short-term, seat-of-the-pants practices. His method is broken down into eight tasks: identification of problems; needs and goals; formulation of alternative courses of action; deciding among priorities; selection of the best alternative; choosing a strategy for plan implementation; reorganizing the university for the execution of the chosen plan; program evaluation and review; recycling back through the previous seven tasks in the light of experience gained. Twenty-one case studies illustrate the author's suggestions and explain some techniques that have been tried.

Plan for Educational Assessment in Florida. Tallahassee, Fla.: Florida State Department of Education, March, 1971.

This is a final report on Florida's assessment study of its schools. The report includes definitions of terms used, descriptions of methods employed and statements of the goals of the study. The appendices include detailed descriptions of the data collection and analysis techniques that were used, a detailed break-down of the administrative structure of the assessment effort, the scheduling network of the project, the proposed 1971-1972 assessment budget, and a reference bibliography.

The Setting for Regional Planning in New Jersey. Trenton, N. J.: Division of State and Regional Planning, Department of Conservation and Economic Development, State of New Jersey, December, 1961.

Five functions of planning are discussed:

1. Anticipating decisions and presenting alternatives.
2. Analyzing combinations of alternatives and their consequences.
3. Assisting in selecting the best alternatives.
4. Coordinating the implementation of decisions.
5. Maintaining a feedback as a guide to future decisions.

Temkin, Sanford. "Comprehensive Planning for School Districts." Paper presented at the Annual Meeting of the American Educational Research Association, Minneapolis, March, 1970. (ED 041 389)

The author feels that current "PPBS approaches" present serious implementation problems for school districts. He provides a methodology for engaging in comprehensive, system-wide planning for school districts. The author contends that an evolutionary installation of the planning mechanism is required because the planning mechanism itself causes a great deal of change. Once the planning mechanism has been installed information flows can be generated to evaluate the system as it is, in order to form a basis for future change decisions.

Vivekananthan, P. S. The Development of a Research and Development Planning System in Education. Raleigh: North Carolina State University, 1971.

A system of evaluating and selecting education projects for funding is presented. The system is mathematical and is based on standard techniques of operations research and systems analysis.

2. PPBS

Chambers, George A. "The Concepts and Problems of Planning-Programming-Budgeting System," Journal on State School Systems, I (Winter, 1968), pp. 223-236.

The author traces the history of the Planning Programming Budgeting System (PPBS), attempts to define PPBS, notes the benefits of the system, and identifies some of the problems of PPBS.

Corrigan, Robert E., and Betty O. Corrigan. System Approach for Education. Anaheim, Calif.: R. E. Corrigan Associates, 1970.

This booklet describes the objectives, assumptions, operation, and evaluation techniques of a PPBS system for California in a clear and attractive format.

"Criteria for Evaluation for Planning State and Local Programs." Washington, D. C.: Committee on Government Operations, United States Senate, July, 1967.

This paper aims at clarifying and developing some of the fundamental concepts of the approach to governmental program planning commonly included under the term planning-programming-budgeting system (PPBS). This paper represents a first attempt at identifying specific criteria (i.e., measures of effectiveness) for use in evaluating alternative proposals for programs for carrying out major state and local governmental functions. To date there has been little written that attempts to identify specific criteria useful for government program analysis. This paper discusses the criteria problem and makes the attempt to identify meaningful criteria in the hope that it will stimulate further efforts both within individual governments and by professionals outside governments who are experienced in analytical techniques. The list of criteria provided here is far from being either exhaustive or definitive. It is to be emphasized that for individual program analyses, considerable effort will still need to be applied to the determination of evaluation criteria appropriate to the specific problem. The list of criteria contained in section III of this paper can be used as a starting point. The emphasis in this paper is on non-monetary criteria, where the author feels the greatest effort is needed in state and local government program analyses.

Derr, C. Brooklyn. "Organizational Development and PPB for Education." Paper presented at the Annual Meeting of the American Educational Research Association, New York, February, 1971.

The author feels that PPBS planners often neglect vital human problems and offers a technique for interweaving PPBS and the development of human potential within an organization. This technique includes allowing each person to participate in the planning process insofar as his own function will be affected, planning for a degree of independence for subordinates, and encouraging rational risk-taking. This is done by so structuring the planning and rewards processes that trust, agreement with organizational goals and two-way communication are built into the system. A detailed five-phase outline of such a program is presented.

Educational Resources Management System. Report of the Second National Conference on PPBES in Education. Arlington Heights, Ill.: The Research Corporation of the Assocation of School Business Officials, 1971.

This package of materials consists of two volumes; one is an "overview" of the second and will appear as Chapter One of the final project report. The purpose of the system reported on here is to develop a conceptual design for a PPBS that will be appropriate for local school districts. The elements of PPBS and its analytical techniques are discussed and explained clearly, sample usable forms are given, and examples of working PPBS operations in local school systems are described.

Fogel, Richard L. "Conditions for the Use of PPB," *Journal of Research and Development in Education*, III (Summer, 1970), pp. 72-79.

The author suggests that the following four conditions must be met in order to effectively utilize a Planning-Programming-Budgeting (PPB) system: (1) the organization's programs should be categorized into a program structure so that programs aimed at similar objectives are considered together; (2) the administrator must examine the capability of his staff to determine the extent to which certain aspects of PPB should be used; (3) the administrator should consider the location of the analytic staff; and (4) an information system must be developed to provide adequate cost and output data.

Foster, Charles W. (ed.). *The First National Conference on PPBES in Education*. Chicago: Research Corporation of the Association of School Business Officials, 1969.

The Research Corporation of the American Association of School Business Officials has been working on a PPBS design under a USOE multi-year grant. Field efforts are underway in Dade County, Florida, and eight pilot districts throughout the country. This document includes a history of program budgeting by David Novick of the RAND Corporation and a joint report by William Curtis, project director and John Gott, research associate for the project. The joint presentation describes some of the experience and new thinking resulting from the previous year's field experience.

Hartley, Harry J. "PPBS and Cost Effectiveness Analysis," *Educational Administration Quarterly*, V (Winter, 1969), pp. 65-80.

The author delineates the major conceptual and operational elements of a Planning Programming Budgeting System (PPBS), describes exemplary program budgeting installations in urban schools in three states, discusses performance indicators that may be used in cost-effectiveness analysis, and examines some of the limitations of PPBS.

Hatry, Harry P. "Status of PPBS in Local and State Governments in the United States," Policy Sciences, II (June, 1971), pp. 177-189.

This article describes the current status of PPBS in state and local governmental organizations. The author briefly touches on the 5-5-5 Project and the New York City project in 1967, on the 1968 follow-up projects sponsored by HVS, on the PPBS teams sent out by the Federal government in 1969, on the states' and cities' governmental PPBS efforts and concludes that the impact of PPBS in the U.S. has been marginal to date. The author finds that most PPBS efforts have gone only so far as to define goals, have been unable to define interagency programs, have not been concerned with projections or forecasts extending past the next year, have not integrated policy formulation with PPBS, have been met with hostility by the legislatures of the states, have not utilized community particpation, and have not utilized qualified personnel. The author believes that the reasons why PPBS has had little impact on state and local government are: 1) lack of confidence in PPBS by governments, 2) lack of funds for implementing PPBS, 3) lack of authority at the local level for anyone to implement a thorough-going PPBS, 4) political pressures against PPBS, 5) the conceptual complexity of PPBS, 6) the difficulty of collecting reliable cost-effectiveness data, 7) the lack of qualified personnel, 8) different attitudes between PPBS professionals and politicians, and 9) organizational inertia.

Innovations in Planning, Programming, and Budgeting in State and Local Governments. Washington, D.C.: Joint Economic Committee, Congress of the United States, 1969.

This is a compendium of papers reporting on PPBS pilot programs in California, Michigan, New York, Wisconsin, Dade County, Los Angeles County, Nashville-Davidson County, Nassau County, Wayne County and Dayton, Ohio. These areas participated in the 5-5-5 project to test out the implementation of PPBS in state and local government. The authors discuss the history of the project, the methods used and the results obtained. The problems that arose and samples of the forms that were used are also presented in each case.

Levine, Donald M. "Achieving Balanced Implementation of Program Budgeting for Education." Paper presented at the Annual Meeting of the American Educational Research Association, New York, February, 1971.

This paper reviews the differences between the planning approach of Program Budgeting and the more traditional practice of management by dealing with each crisis as it arises. The author stresses the self-conscious reflectiveness of Program Budgeting. A two-year study of the administration of the Boston Public Schools convinced the author of the need for planning, programming, budgeting techniques, and a balanced implementation of PPB. Balanced implementation is seen as including independence for the PPB implementation and analysis group. The author found that school administrators question the validity of PPB techniques, cannot fit the new program into their traditional structures, and tend to regard the whole procedure as an accounting function. Thus implementation balanced among the various levels of management is seen to be the first prerequisite for successful implementation. The author sees PPB as proceeding from the top downwards in order to assure that PPB will involve policy decisions as well as accounting techniques. It was found that middle levels of management were the most unresponsive, with teachers in particular and top management to a lesser degree being more interested in innovation. The administrative structure and its traditions were found to be the chief obstacles to implementing PPB. It was found that the people previously thought to be the most recalcitrant (i.e., teachers) were in fact the most willing to initiate PPB, which means that balanced implementation is both desirable and possible.

Olds, Robert. "A Pacification Program for the Taxpayer's Revolt," The School Administrator, (June, 1971), pp. 15-16.

This article stresses the communication aspects of PPBS implementation. The author feels that superintendents and their boards are unaware of the tremendous communication requirements that are built into the Program Planning Budgeting System (PPBS). Olds briefly discusses five steps which can be taken to build a better communication network. The last step is "Hurry."

Ostrander, Kenneth H., and George D. Strayer. "PPBS: Its Nature and Implementation," University of Washington College of Education Record, XXXVI (November, 1969), pp. 3-6.

The authors discuss two fundamental approaches to the implementation of planning-programming-budgeting systems (PPBS): (1) comprehensive implementation, and (2) selective implementation. They advise those contemplating the implementation of PPBS in educational areas to try selective implementation initially.

Scamman, James. "PPBS: Focus on Output Performance." Paper presented at the Annual Meeting of the American Educational Research Assocation, New York, February, 1971.

This item describes the PPBS project in process in the Kenoska, Wisconsin schools. It was begun in response to community distrust of the budgetary figures presented by the schools to the Board of Education. A management consulting firm recommended the adoption of PPBS and the employment of a Director of Planning, Budgeting and Data Processing. The author became the planning director and proceeded to implement PPBS in a two-part computer-aided process. This item gives the over-all plan, organizational charts, and strategies used and recounts the problems encountered. Examples of computer output are given in the appendix.

Scott, Dale H. "How PPBS is Being Used in California," School Management, XV (February, 1971), pp. 12-15.
The author describes how PPBS is being used in California to gain voter support for taxes for schools. Specific forms and examples of use are presented and the over-all budgetary program is discussed.

Sisson, Roger L., and C. Edwin Brewin. An Introduction to the Education-Planning-Programming-Budgeting System. Philadelphia: Government Studies Center of the Fels Institute, University of Pennsylvania, November, 1969.
The authors maintain that educational units -- school districts, intermediate units and state departments of education -- are being pressed to justify their allocation of resources. The Education-Planning-Programming-Budgeting System (EPPBS) has been developed to provide a rational basis for selecting programs and projects which will utilize resources most fully to accomplish educational objectives. EPPBS reduced the chances of being surprised by future changes in enrollment, revenues, or requirements of the community. It ensures that each year's budget is a step toward the improvement of the educational unit and toward greater satisfaction of community requirements. EPPBS is a series of specific procedures and decision processes for annual use, which, when properly executed, permit the evaluation of alternatives against specific educational criteria. It encourages consideration of long-range consequences of this year's decisions. Included are some sample printouts from the computer programs developed for the system.

Sisson, Roger L., et al. "The Project Concept in Planning, Programming and Budgeting," Socio-Economic Planning Sciences, IV (June, 1970), pp. 239-261.
The authors focus on one major difficulty in applying planning-programming-budgeting in non-defense industries. Their focus is on the problems of defining a "program alternative" and of deciding how to create alternatives and how to select among them on a rational, cost-benefit basis. They describe three approaches to planning: (1) incremental expenditures, (2) start-from-scratch planning, and (3) incremental planning by project. They describe

their education-planning-programming-budgeting system, which has the following procedural steps: (1) data collection and analysis; (2) base case; (3) objectives, priorities and constraints; (4) project design; and (5) project selection.

[illegible]thies, Arthur. A Conceptual Framework for the Program Budget. Santa Monica, Calif.: The Rand Corporation, 1964.
This memorandum outlines the government decision-making process and the role played therein by budgeting and explores the progress made over the last 50 years in budgetary procedures. It concludes with suggestions on how to apply PPBS to this process. The contrast between traditional methods of budgeting and PPBS are clarified and discussed, and the advantages of PPBS are explored.

STEP: System for Trenton's Educational [illegible] Conceptual Design Report. Tren[illegible]bruary, 1971.
This is Trenton's EPPBS Project [illegible]." It outlines the conceptual design of a PPBS implementation in eight stages within a time frame of 5 years and discusses its elements in detail. Extensive flow charts are presented.

Wildovsky, Aaron. "The Political Economy of Efficiency," The Public Interest, (Summer, 1967), pp. 30-48.
The author proposes a policy analysis technique as an alternative to PPBS. He analyzes and compares experiences of the Defense Department and domestic agencies with PPBS. He concludes that PPBS has been damaging to prospects for improved policy analysis at the [illegible] Finally, he suggests ways to facilitate [illegible]is.

3. Cost-Effectiveness Analysis

Carpenter, Margaret B., and Sue A. Haggart. "Cost-Effectiveness Analysis for Educational Planning," Educational Technology, X (October, 1970), pp. 26-30.
The authors emphasize that to use the results of cost-effectiveness analysis most wisely in educational planning it is necessary to know how to structure, conduct and interpret the analysis. Cost-effectiveness analysis is seen as a tool which can assist the planner in relating the resources required by an educational program to its effectiveness, often measured by pupil achievement.
It can be used: (1) to help assess the relative worth of several innovative programs with the same educational outcome; (2) to determine whether a single program is becoming more or less effective as time passes so that

steps may be taken to improve it, if necessary; and (3) to help assess the relative worth of the same program for different student populations or in different school settings. The authors discuss the following resource-oriented problems: (1) determining the resources required by a program, (2) the misleading nature of a single measure, and (3) the lack of a fully developed methodology for resource and cost analysis. They also discuss the following effectiveness-oriented problems: (1) measuring effectiveness, (2) the inadequacy of a single measure, and (3) the lack of a methodology for estimating the effectiveness of future programs.

Fox, Peter D. "A Theory of Cost-Effectiveness for Military Systems Analysis," Journal of the Operations Research Society of America, XIII (March-April, 1965), pp. 191-201.

This paper presents a theoretical basis for cost-effectiveness analysis. It is argued that, frequently, a range of effectiveness or cost levels may be acceptable to whoever must ultimately decide which military system (if any) should be acquired. The function of the analyst is to present a schedule of alternatives and not to optimize in the sense that he recommends the selection of a particular alternative. The formulation of the schedule is discussed where the cost and effectiveness associated with each alternative are viewed as random variables. The paper concludes with some general observations relating to military system selection. The article treats some very general theoretical aspects of cost-effectiveness but does little to add to such prescriptions as "select the action which is expected to yield the highest return for a given level of cost."

Halbert, Michael H., and Patrick J. Robinson. Management Guide to MAPP: (Mathematical Analysis of Perception and Preference). Philadelphia: Marketing Science Institute, March, 1968.

This report describes the Institute's efforts to collect, organize, modify and develop a series of mathematical techniques and computer programs to aid in the quantification of preferences and priorities. A system was developed for first providing a perception framework and then quantifying preferences from the framework data. The techniques require the collection of paired-comparison data and yield a multi-dimensional scaling of the items being perceived. One of the advantages claimed is that a respondent is not directly queried about the basis of the similarity ratings.

Heuston, M. C., and G. Ogawa. "Observations on the Theoretical Basis of Cost-Effectiveness," Journal of the Operations Research Society of America, XIV (March-April, 1966), pp. 242-266.

This paper presents some observations on the theoretical foundation of cost-effectiveness analysis. It describes the results of continuing research to develop a comprehensive and rigorous description of the important elements of cost-effectiveness as used by the aerospace industry for military and commercial systems planning. The primary objective is to utilize basic mathematical and statistical theory to construct the rules, properties, and hypotheses that are needed to satisfy the contractual requirements imposed by various government customers.

Kraft, Richard H. P. Cost Effectiveness Analysis of Vocational-Technical Education Programs. Tallahassee: Florida State University, 1969.

This study was carried out for Florida's state education department with a view towards providing information for a proposed PPBS for Florida school administration. Cost-effectiveness is explained and its literature is reviewed, with the major theories and methods explained for cost-benefit analysis also. The second chapter explains cost-utility concepts, and the third chapter leads in to PPBS. Once these concepts have been introduced, the author applies them to school administration problems in Florida. The remaining half of the book gives the statistical data from Florida vocational schools that is needed to perform a cost-effectiveness analysis, provides a model for the analysis, and concludes that vocational education can have an astonishingly high payoff in terms of the earning abilities of graduates of vocational schools.

Rudwick, Bernard H. Systems Analysis for Effective Planning: Principals and Cases. New York: John Wiley & Sons, Inc., 1969.

This book is primarily concerned with a priori planning for decisions about the selection of technological systems. Many techniques of systems analysis are explained. The intent is to provide planners with more systematic methods for creating more and better system alternatives, as well as a better understanding of how to relate the value of systems to the higher-level organizational objectives.

Smithies, A. Government Decision-Making and the Theory of Choice. Santa Monica, Calif.: Rand Corporation, 1964.

The author presents a cost-effectiveness theory based on indifference curves. His article highlights many theoretical problems which are often not faced by analysts when they attack real problems.

Tanner, C. Kenneth. "A Heuristic Approach to Program Cost/Effectiveness Analysis." Paper presented at the Annual Meeting of the American Educational Research Association, New York, February, 1971.

This report presents a mathematical output evaluation model for curriculum and related decision-making. Program cost is traded off against the effectiveness and usefulness of courses in the curriculum.

Temkin, Sanford. "A Comprehensive Theory of Cost-Effectiveness." Philadelphia: Research for Better Schools, Inc., April, 1970. (ED 040 503)

The author notes two deficiencies that stem from contemporary cost-effectiveness methods. Each technique suffers from a lack of a firm theoretical base of assumptions, and an absence of a means for selecting an efficiency technique for a practical problem. This paper is intended to correct these inadequacies and to appeal to the mathematically-trained person who is interested in a general theory of school system planning and in methods such as cost/benefit and cost-effectiveness analysis. Temkin presents a theoretical development of 9 decision cases in an evolutionary framework ranging from the simplest decisonmaking situation (Case 1) to complex circumstances faced by school administrators (Cases 8 and 9). The cases are augmented by mathematical proofs. In addition, the author discusses his rationale for recommending the use of cost-effectiveness for school district comprehensive planning rather than benefit/cost analysis.

Temkin, Sanford. "The Elasticity of Cost-Effectiveness: Implications for Public Sector Decision-Making," Paper presented at the Annual Meeting of the American Educational Research Association, New York, February, 1971. (ED 047 391)

This paper presents a way to compare effectiveness and cost information within a project-oriented system. Basically, the model examines the system with and without the particular project being scrutinized. An evaluative variable, the Elasticity of Cost-Effectiveness, summarizes the information. Some discussion about the implications of various ranges of the variable is provided.

Temkin, Sanford and Margaret J. Jones. "Ways for School Districts to Use Effectiveness and Cost Information in Planning," Philadelphia: Research for Better Schools, Inc., 1970.

This article describes a way of thinking which, according to the authors, can be applied to many school planning and decision-making problems. The article attempts to relate planning jargon (e.g. effectiveness, efficiency, feasibility) to questions often raised by school administrators. A case is presented in which a language arts coordinator weighs effectiveness and cost considerations in arriving at a series of decisions related to his reading program.

Vedder, James. "Planning Problems With Multidimensional Consequences," Journal of the American Institute of Planners, XXXVI (March, 1970), pp. 112-119.

The author suggests various ways of dealing with multidimensional consequences in planning decisions.

4. Input-Output Analysis

Bressler, Marvin, et al. Evaluation of the Effectiveness of Educational Systems. Final Report. Volume I. Princeton, N.J.: Princeton University, April, 1969. (ED 033 469)

This volume discusses the background, findings, analysis, conclusions and recommendations of a study aimed at developing a cross-national model to enable the United States and five European democracies, England, France, Italy, West Germany, and the Netherlands, to make more adequate estimates of the effectiveness of their primary and secondary schools. Two major tasks attempted were the development of a taxonomy for the classification of claimed and confirmed educational outcomes, and a comprehensive measure to indicate a gross educational product.

Copa, George H. "Identifying Educational System Inputs Toward Production Function Application in Education." Paper presented at the Annual Meeting of the American Educational Research Association, New York, February, 1971.

The production function is described as a method of defining the relationship between the inputs and outputs of educational programs, as well as assessing the relationship between the inputs themselves. It is claimed that the production function has the potential to provide the kinds of information about effectiveness and efficiency which are necessary to evaluate and select from among alternative programs. This study describes the design of a multiple linear regression model for identifying the important inputs to an educational system. The Educational system inputs are divided into educational and non-educational inputs. Educational inputs are further divided into quantity and quality-related inputs, and non-educational inputs into participant and environment related inputs. The major limitations, requirements, and assumptions of the model are listed and then a specific application is described. The major implication was that non-educational inputs, especially those related to the participants, explain a much larger share of the variation in output among farm management programs than do the educational inputs.

Kershaw, J. A., and R. N. McKean. "Systems Analysis and Education." Santa Monica, Calif.: The Rand Corporation, 1959.

This was one of the first articles suggesting input-output analysis for educational decision-making.

Levin, Henry M. "A New Model of School Effectiveness." Stanford, Calif.: Stanford Center for Research and Development in Teaching, School of Education, Stanford University, May, 1970,

The author outlines a method for the econometric analysis of the output production of schools.

Miller, Richard I. "A System Analysis of Education in Kentucky Public Schools." Paper presented at the Annual Meeting of the American Educational Research Association, Chicago, February, 1968.

The purpose of this article is to analyze the relationships between school variables, both individually and in combinations. Multiple regression analysis was employed to examine the relationships among socio-economic (input) factors, instructional (process) factors, and several measures of student achievement (output). Nineteen factors were considered. Miller lists the 12 findings of the study and provides an explanation of results. Although the author states that the Kentucky study may not be applicable to other states, some of the findings do not substantiate preconceived notions of relationships among variables.

Mood, Alex M. "Macro-Analysis of the American Educational System," Operations Research, XVII (September-October, 1969), pp. 770-784.

This paper presents a rudimentary model of the public school system as an input-output process. The inputs are students' own abilities and attitudes, parental support, peer support, quality of the school system, community support, and society's posture with respect to education. Outputs are various categories of academic achievement as well as social competence, responsibility, self confidence, creativeness, ethics, and ambition. All these factors must be measured by index numbers or simple indicators. The model is a set of regression equations relating outputs to inputs. Some implementation of the model has been made possible by means of data gathered in the U. S. Office of Education's Equality-of-Educational-Opportunity Survey.

Mort, Paul R., and Orlando F. Furno. "Theory and Synthesis of a Sequential Simplex: A Model for Assessing the Effectiveness of Administrative Policies." New York: Institute of Administrative Research, Teachers College, Columbia University, 1960.

This report describes efforts to investigate factors related to the quality of school output. Essentially, the "Sequential Simplex" approach is a multiple regression model which uses dummy and stratified independent variables.

Each school district site is defined as a universe to avoid sampling considerations. Several school quality measures or dependent variable instruments are discussed. Statistical quality control charts are used to relate dependent and independent variables. Standard scores derived from two decades of research serve as upper and lower limits for this control chart analogy.

Tannian, Francis, and Jon Magoon. "Systems Analysis for Urban School Decision Making," Educational Technology, X (October, 1970), pp. 31-33.
The authors outline a comprehensive school system model, which is based upon input/output analysis. They believe that the model, when put into operation, could aid school program decision makers. The utility and difficulties of using the model are described.

Zima, George, C. "A New View Of The Relation Between Cost And Quality In Education," IAR Research Bulletin, X (February, 1970), pp. 1-3.
It is stated that a long history of cost-quality studies in education has shown a high positive correlation between school district expenditure level and some criterion of the quality of education. It is stressed that a community's characteristics, its social, economic, and political forces, increasingly appear to be more important in determining financial policies, expenditure and educational quality than was previously recognized. There seems to be an assumption in many past studies that spending more automatically improves quality.

5. Cost/Benefit Analysis

Bishop, E. B. "R.O.C.E. as a Tool for Planning and Control," Long Range Planning, II (December, 1969), pp. 80-87.
The author examines the main weakness of the Return on Capital Employed (R.O.C.E.) concept, and provides suggestions as to the ways in which the weakness may be overcome. He emphasizes that R.O.C.E., or any management ratio, is inadequate if used as a sole yardstick for planning and control, but that, as part of a family of ratios and important financial relationships, it takes its place in a powerful managerial tool-kit. He also deals with a number of problems arising from the divisional use of the R.O.C.E. concept, and examines its important role of linking the operations of the segments of a business with the corporate objectives set for the whole.

Lichfield, N. "Cost Benefit Analysis in Urban Expansion: A Case Study: Peterborough," Regional Studies, III (1969), pp. 123-155.

The author shows how a cost benefit analysis technique, called the Planning Balance Sheet, can be used as a design tool in the process of plan making and as a method of setting out the rationale behind plans which are recommended by professional planners.

McKean, Roland N. "Special Problems in the Analysis of Water-Resource Projects," Efficiency in Government Through Systems Analysis, David B. Hertz (ed.). New York: John Wiley and Sons, Inc., 1965.

This item refers to Part III, "Special Problems in the Analysis of Water-Resource Projects." McKean discusses criteria in the selection of water-resource projects, kinds of benefits and costs, such as spillovers, over-counting and secondary benefits, and valuation of benefits. The author describes the deficiencies of the traditional cost/benefit ratio measure as a decision criterion. McKean recommends the use of the internal rate of return criterion. He discusses the nature of an appropriate discount rate (not the market rate) and describes how time preferences of decision-makers can alter optimum decisions. In viewing types of benefits and costs, McKean recommends that technological spillovers, but not pecuniary effects, be included in project analysis. In addition, secondary benefits only arise under situations of previous unemployment. McKean also mentions the treatment of foregone taxes and other miscellaneous double counting that might mislead the analyst. In the final section of Part III, the author presents a theoretical model as well as practical applications of his methodology for valuing benefits. Examples include cases involving incremental and indivisible amounts of investment.

Polin, Lewis. "Benefit/Cost Analysis." Philadelphia: Research for Better Schools, Inc., 1968.

This paper assesses benefit/cost analysis from several vantage points: its history, the problems involved in its application, some illustrative examples of its use, and its present role in decision-making.

Proposed Practices for Economic Analysis of River Basin Projects. Report to the Federal Inter-Agency River Basin Committee Prepared by the Sub-Committee on Benefits and Costs. Washington: D. C.: Government Printing Office, 1950.

This booklet is often referred to as the "green book." It is one of the first practical treatments of "what to do" in analyzing benefits and costs for public sector projects. In discussing criteria at the project level, the green book suggests the criterion of maximization of net benefits for comparing different projects.

6. General Systems and/or Economic Analysis

Alkin, Marvin C. "The Use of Quantitative Methods as an Aid to Decision Making in Educational Administration." Paper presented at the Annual Meeting of the American Educational Research Association, Los Angeles, February, 1969.

Three quantitative techniques for decision-making are discussed as being most suited to educational application: Leontief input-output model, linear programming, and queuing theory.

Alkin, Marvin C., and James E. Bruno. "System Approaches to Educational Planning," Social and Technological Change: Implications for Education. Piele, Philip K., Terry L. Eidell, Stuart C. Smith, (eds.), Eugene, Oreg.: Center for the Advanced Study of Educational Administration, 1970.

The authors discuss some planning techniques that should be of use to school administrators in the areas of determining objectives, examining alternatives, detailing costs, modeling a plan and deciding on the path to follow. The reader is familiarized with the history and elements of operations research (including linear and dynamic programming, input-output analysis, computer simulation, Monte Carlo methods, Markov chain computations and queuing theory), PPBS, systems analysis, simulation, gaming theory, the Delphi technique, PERT and CPM. The difficulties and limitations of the various techniques are discussed and illustrated with examples. Some suggestions for new applications are made and a fine bibliography accompanies the article.

Applications of Systems Analysis Models: A Survey. Washington, D.C.: Office of Technology Utilization, National Aeronautics and Space Administration, 1968.

Systems analysis technology is seen as a rather loosely defined spectrum of techniques related to each other by several common characteristics which describe the approach taken to problem solving, a systematic and usually quantitative approach which concentrates on the system as a whole, as opposed to its constituent elements. This report focuses on the application of the entire family of techniques, referred to as systems analysis technology. The integral and necessary functions of the long-range planning process are described as follows:

1. The assessment of corporate strengths and weaknesses; the assessment of available and potential resources.
2. The assessment of relevant environmental factors, including economic, sociological, technical, and competitive factors; the location of future opportunities.

3. The formulation of clear objectives and general corporate strategy.
4. The formulation of specific programs pursuant to these objectives and strategy.
5. The evaluation of specific programs according to their effectiveness and the resources consumed.
6. The recommendation of alternative strategies and programs.

Banathy, Bela H. "A Systems Analysis of Systems Education," Paper presented to the Annual Meeting of the American Educational Research Association, New York, February, 1971.

There is a confusion about the meaning of the term "systems education." The author distinguishes systems levels and discusses the type of training needed for adequate performance at each of those levels.

Berlinski, David J. "Systems Analysis," Urban Affairs Quarterly, VI (September, 1970), pp. 104-126.

The author describes the history of systems analysis and explains clearly the mathematical terms and methods that it uses. He gives an unusual criticism of the ordinary methods of relating systems theory to systems models in that he attacks the logical basis of much of the work that has been done in these fields. The author then turns to a logical criticism of Forrester's Urban Dynamics model of urban decline.

Casasco, Juan A. Corporate Planning Models for University Management. Washington, D.C.: George Washington University, 1970.

Universities generally employ no recognized planning approaches to administrative decision-making. The author suggests the adoption of three corporate planning techniques and explains their terminology, methods, implementation and role in universities.

Cleland, David I., and William R. King. "Regional Educational Planning: A Systems View," Educational Technology, X (October, 1970), pp. 21-25.

The authors emphasize that effective planning requires the adoption of a systems view. Applying the systems view, they argue that many school districts will find it essential to cooperate in conducting regional planning. The planning process is portrayed as follows: (1) forecasts of the expected educational system environment, (2) planning assumptions, (3) strategic objectives and goals, (4) system of plans, and (5) adaptive mechanisms.

Dror, Yehezkel. "Systems Analysis and National Modernization Decisions," *Academy of Management Journal*, XIII (June, 1970), pp. 139-152.

The author discusses four distinct considerations of systems analysis for modernization decisions: (1) applicability, (2) feasibility, (3) effectiveness, and (4) efficiency. He describes the conditions which should be met under each consideration for systems analysis to be useful.

Dror, Yehezkel. "Systems Analysis for Development Decisions: Applicability, Feasibility, Effectiveness and Efficiency." Santa Monica, Calif.: The Rand Corporation, August, 1969.

Dror suggests that systems analysis is not adaptable to all levels of problems. He proposes a meta-analysis (an analysis of the causes where systems analysis is most effective). He presents a scheme showing the degrees of applicability or feasibility in using systems analysis in eight problem areas, one of which is education. In general, he concludes that systems analysis is more useful for low or medium-level decision-making or in suboptimizing cases of higher-level problems.

Dyer, Henry S. "An Educational Researcher's View of Systems Analysis." Paper presented at the Annual Meeting of the American Educational Research Association, Los Angeles, February, 1969.

The author is somewhat nervous about the instant application of systems analysis to all educational decision-making tomorrow. He worries about some of the systems engineers, cost-effectiveness experts, and other similar types who have just recently discovered educational institutions as a rich field for testing out mathematical models and marketing hardware. He wonders about the reasoning that says that if operations research has yielded such brilliant results in the jungles of Southeast Asis, it can be expected to yield similarly brilliant results in the jungles of American education.

Glossary for Systems Analysis and Planning-Programming-Budgeting. Washington, D. C.: United States General Accounting Office, October, 1969.

This is a revision of a similarly glossary published in 1968. Each definition is clearly presented in detail and illustrated with charts or graphs when appropriate.

Havemann, E. "Organization for Business Objectives," *Long Range Planning*, II (December, 1969), pp. 14-17.

The primary purpose of organization planning is to produce a pattern for mobilizing a company's resources to facilitate achievements of specified and reasonably concrete business targets. A simplified version of the organization planning process is presented as follows: (1) economic analysis and formulation by management of its concrete targets for an appropriate period ahead; and (2) alignment of the structure in accordance with the targets.

Hoos, Ida R. "Systems Analysis as a Technique for Solving Social Problems - A Realistic Overview," Socio-Economic Planning Sciences, IV (March, 1970), pp. 27-32.

Drawing on case materials from completed and ongoing systems analyses, this paper presents an empirical assessment of the current and growing trend toward the utilization of this and related quantitative techniques, such as cost-benefit measures and program budgeting, in social planning. The first section is devoted to examination of the bases for and assumptions underlying, the general acceptance and ubiquitous application of the systems approach; the second deals with the concepts of systems analysis and related techniques; and the third with that technique through which systems management capability is transferred from the private to the public sector. The final section contains a critical appraisal of systems techniques.

Kamrany, Nake M., and Alexander N. Christakis. "A Systems Approach to Public Policy Estimation: Urban Planning at the County Level," Socio-Economic Planning Sciences, III (October, 1969), pp. 229-243.

The authors attempt to develop a conceptual public policy estimation model at the county level employing the systems approach which treats policy variables in the context of an entire system. They suggest that county planners adopt a systematic procedure for continuous re-evaluation of policies in concert with the experience gained through an iterative search of policy space.

Kraft, Richard H. P. (ed.). Education and Economic Growth. Tallahassee: Educational Systems Development Center, Florida State University, 1968.

This book contains the proceedings of the First Annual Conference on the Economics of Education. Part One is titled "Planning Education for Economic and Social Development." It contains articles on the relationship between education and economic growth, an optimum enrollment policy model for developing countries, a discussion of educational planning problems in developing countries, and a report on the development of educational planning models at Harvard. Part Two, "Strategies of Human Resource Development," discusses a systems approach to educational organization, an input-output model for education, a systems analysis for educational planning, and a strategy of human resource development. An article on the relationship between researchers and human resources decision-makers concludes the book.

Kraft, Richard H. P., and Raymond F. Latta. "Systems Engineering Techniques: Embarrassment or Opportunity for Today's Educators?" Educational Technology, IX (September, 1969), pp. 26-30.

The following areas are identified as requiring further clarification:

1. The limitations inherent in using models of any sort.
2. Follow-up procedures after implementation of a model. In short, the monitoring of a system once it is implemented.
3. The availability of specialists or trained individuals capable of skillfully applying the systems approach.
4. The economic and evaluative advantages of the application of the systems approach, with special recognition given to the danger of allowing the reader to draw the faulty conclusion that the systems approach offers a panacea to most--if not all--of education's problems.

Leitmann, George (ed.). Optimization Techniques with Applications to Aerospace Systems. New York: Academic Press, 1962.

This book contains a series of mathematical chapters investigating various methods and approaches useful in solving problems in systems optimization and optimal control.

McNamara, James F. "Operations Research and Education Planning," Unpublished Paper, Center for the Advanced Study of Educational Administration, University of Oregon, 1971.

McNamara considers relationships among operations research and management science on one hand and various concepts of planning on the other. He reviews nearly forty books, papers and journal articles and in the process provides several empirical classifications. A final section of the paper proposes a set of criteria which the author claims "should provide sufficient insight to evaluate models reported in the literature and also to assess the utility of O R models that might be proposed in connection with some future planning or policy analysis."

Post, Arnold R., Roger L. Sisson, and Charles I. Goldman. A General Method of Estimating Future School Enrollment. Philadelphia: Government Studies Systems, Inc., June, 1970.

The method of estimating school enrollments that is described in this report aims at providing 5-year forecasts. It uses population data and new housing starts to make such forecasts. The authors illustrate typical forecast outputs, show how to use their system and describe the computer program used. The book is mainly a manual to be used in conjunction with the company's computer program. The program was used in 1967-68 in Bucks County, Pennsylvania. The computer program listing is supplied.

Raisbeck, Gordon. Information Theory: An Introduction for Scientists and Engineers. Cambridge: Massachusetts Institute of Technology Press, 1964.

The first two chapters are of interest here. The elements of information theory are explained, including a discussion of the relevant definitions of "information", "communication system", "channel", "signal", etc. The same concepts are then defined in mathematical terms, the relationship between information and probability is explored, and the elements of coding theory are explained. An amusing example illustrates the foregoing material.

Sanders, Donald P. "Planning for Educational Development." Columbus: Evaluation Center, Ohio State University, 1967. (ED 030 974)

Educational planning is concerned with how many must learn what, how well, in order to satisfy future requirements for educated persons. Assessment of the existing set of educational services is seen as a first step in educational planning. Assessment inlcudes capacity, efficiency, effectiveness, cost, and analysis. On the basis of assessment, targets for development may be identified. The process is to work backwards from the identified targets to the inputs required.

Sisson, Roger L. An Engineer in Reading Land. Philadelphia: Government Studies & Systems, Inc., 1970.

This is an amusing account of the author's findings in the fields of research on and teaching of reading and of the administration of such projects. He suggests that "engineers" are necessary to carry results back and forth among these fields, because there is at present no technology for implementing research findings.

Verco, D. J. A. "International Conference on Educational Planning, 1968," Australian Journal of Education, XIII (Summer, 1969), pp. 114-119.

A conference on educational planning emphasized two types of output relationships: (1) the relationship between the resources used by an education system and the educational results obtained, a measure of its internal efficiency; and (2) the relationship between resources invested in education and the resulting benefits to students and society, a measure of its external productivity.

7. Planning, General

Alkin, Marvin C. "Products for Improving Educational Evaluation," Evaluation Comment, II (September, 1970), pp. 1-15.

This is the Fifth Annual Report of the Center for the Study of Evaluation at the University of California at Los Angeles. It describes the work toward the Center's five goals, (Needs Assessment, Program Planning, Implementation Evaluation, Progress Evaluation, Outcome Evaluation), which are to be achieved through three major programs: Evaluation of Educational Systems, Evaluation of Instructional Programs, and Evaluation Methodology and Theory. The products of the Center consist of courses, tests, and measurement techniques, that are available to school districts wishing to evaluate and/or improve their definition of goals, their collection and analysis of statistical data, their pre-school programs, the attitudes of students, the achievement levels of students (particularly in reading and mathematics), psychological testing, testing procedures, etc. These products are described briefly in this report.

Alper, Paul. "Some Consistency Models in Educational Planning," Socio-Economic Planning Sciences, IV (June, 1970), pp. 201-206.

The author explores consistency or logical compatibility models of educational planning to describe their common features and to determine their relevance to the actual planning situation. He believes that educational planning desperately needs models which explain the "physics" of the educational system, and that consistency or logical compatibility models do not necessarily fill this need.

Altman, James W. "A Behavioral View of Vocational-Technical Education." Paper prepared for the Symposium on Vocational-Technical Education: Prospectus for Change, Boston, November, 1967.

The author views the need for change in vocational education as a result of the acceleration of scientific discovery and the concentration of educational resources in curriculum development; thus he discusses the early stages of planning vocational curricula. His fourteen stages of vocational curriculum development are: (1) identify milieu forces, (2) identify resources, constraints and contexts, (3) delimit the region of concern, (4) define an ideological base, (5) define criteria of success, (6) structure a region of criterion behavior, (7) establish a basis for sampling behavior, (8) analyze behavior, (9) organize and sequence objectives, (10) develop performance measures, (11) define media, (12) develop instructional materials and procedures, (13) conduct preliminary tryouts, and (14) implement materials.

Anderson, C. Arnold. "Some Heretical Views on Educational Planning," Comparative Education Review, XIII (October, 1969), pp. 260-275.
The author criticizes the conception, professional preparation, and execution of the International Conference on Educational Planning held at Unesco House in Paris during August of 1968. He indicates that it is imprudent to include implementing educational plans within the domain of educational planning, as the conference did. His view is that school systems embody and are constrained by certain distinctive principles of structure and process. Planning cannot transcend or circumvent the basic features of an educational system and at the same time deserve to be called planning. Educational progress can be willed in certain favorable conjunctures or circumstances, but it is unlikely at the same time to be planned if the aims are discordant with the ways in which schools operate.

Arnold, Mary F. "Basic Concepts and Crucial Issues in Health Planning," American Journal of Public Health, LIX (September, 1969), pp. 1686-1697.
The author defines the word "planning" in various ways and shows that certain results and problems arise from our concept of the planning process. An overview of the literature on various different formulations of the planning process, is given, the political and social effects of planning on a society are discussed, and the differences between a planned society and a planning society are enumerated.

Beeby, C. E. (ed.). Qualitative Aspects of Educational Planning. Paris, France: International Institute for Educational Planning, 1969.
This book arose from a symposium on qualitative aspects of educational planning with particular reference to developing countries. It contains eleven articles, as follows: "Time for a Change of Strategy" by P. H. Coombs discusses trade-offs between quantity and quality in education around the world in the last decade, and the implications of the foregoing for educational planning. "Educational Quality in Practice" by C. E. Beeby explores the education problems of developing nations in a sensitive and imaginative way and suggests that in nations of this type "quality" means something different from what it means in a developed nation. "Economic Aspects of Quality in Education" by W. A. Lewis discusses the interrelationship of a country's economic characteristics and its educational system. "The Idea of Quality in Education, and The Difficulty of Costing It" by H. L. Elvin deals with the problems of measuring quality and costing it out in the special case of education and cautions against measuring such quality in traditional ways. R. Aron's article, "Sociological Comments on Concepts of Quality and

Quantity in Education," discusses certain sociological aspects of France's educational problems that are similar to those of developing nations and the part education plays in the struggle between elitism and democracy. "The Meaning of Quality in Education" by R. S. Peters seeks to define the word "quality" and shows how various definitions have different implications for educational planning. "Improvement of Quality in Education: Case Study of Secondary Education in India" by A. R. Dawood reviews the history and current state of secondary education in India in eleven pages and sketches some suggestions for further improvement. "Two School Systems Within One Society" by F. Bowles describes a duality within the American school system, where middle class children and poor children seem to go to school in two different worlds. The author uses this idea as a framework within which to discuss Negro education. S. A. Shumovsky's "Case Study of Higher Technical Education in The USSR" chronicles the efforts of the Soviet Union since 1929 to produce sufficient numbers of engineers and scientists in a developing nation. T. Husen's "Some Views on Cross-National Assessment of the 'Quality Education'" discusses ways to compare the quality of education in different countries. "The Evaluation of Quality in Education by H. Philip provides an outline of a checklist for evaluating education.

Boehm, George A. W. "Futurism: Not Oracles. Planners. They're Working to Shape Tomorrow," Think, XXXVI (July-August, 1970), pp. 16-23.

The author believes that futurists do not aim to predict the future in terms of specific events and innovations. Rather, they plot an assortment of possible futures and then decide what policies, what chance happenings would make each particular future come true.

Buck, Roy C., and Robert A. Rath. "Planning as Institutional Innovation in the Smaller City," Journal of the American Institute of Planners, XXXVI (January, 1970), pp. 59-64.

The authors discuss the view that public planning is a form of innovative behavior whose goal is to introduce new ideas into the political system where concerned citizens might work toward their implementation. They document a tendency on the part of mayors and planning commission chairmen in smaller cities to define planning as something less than comprehensive, innovative, and developmental. Their findings indicate that traditionally held community values and beliefs are highly tenacious, even in the face of active efforts by local planners and their supporters.

Buckland, C. P. "Proposed Continuing Education Program for System/ Project Management in Public Administration." Columbus: Defense Management Center, Ohio State University, March, 1968.

The author states that PPBS, system analysis, operations research, etc., are typically described as decision-making tools, but feels that they are nothing of the sort. Each has a definite value in aiding decision making, but they attain maximum value only when used selectively and in close association with each other. Even then, they are merely aids to the exercise of mature judgment.

Caldwell, Michael S. "Input Evaluation and Educational Planning." Columbus: Evaluation Center, Ohio State University, January, 1968. (ED 075 043)

The author describes the program selection process and suggests the following criteria for assessment of plans: relevance, legality, congruence, legitimacy, compatibility, balance, practicability, and cost-effectiveness.

Carrese, Louis M., and Carl G. Baker. "The Convergence Technique: A Method for the Planning and Programming of Research Efforts," Management Science, XIII (April, 1967), pp. B-420-B-438.

The convergence technique, developed specifically for the planning and programming of research efforts, involves the formulation of a series of flows and arrays depicting major program elements and individual projects, sequentially ordered on the basis of research logic, and graphically represented by a matrix which relates research performance to resources required.

Crawford, Charles O. "Functions of Independent Variables in Research and Program Planning," Public Health Reports, LXXXIV (September, 1969), pp. 831-834.

With a program as the dependent variable, the author groups independent variables into three broad categories: (1) demographic, (2) ideological, and (3) behavioral.

Cybert, Frederick R., and Walter L. Gant. "The Delphi Technique: A Tool for Collecting Opinions in Teacher Education," Journal of Teacher Education, XXI (Fall, 1970), pp. 417-425.

The Delphi Technique was used to prevent the undue influence of the personalities of individuals on the collection of opinions on the goals and means of teacher education in Virginia. More than 200 educators, students, administrators and community leaders participated. The insertion of a bogus item showed that the Delphi method can be used to mold opinion, as well as to collect opinions. Respondents believed that increasing quantity and quality of teachers was the most important goal. The most important means of accomplishing goals was felt to be increasing the state university's involvement with the public schools. Political leaders and heads of educational organizations were least often in agreement with the group as a whole.

Dror, Yehezkel. "Muddling Through - 'Science' or Intertia?" Public Administration Review, XXIV (September, 1964), pp. 153-157.
This article is critical of an earlier article by Charles E. Lindblom in which "muddling through" was defended as a justifiable means of making decisions. The author views that process as justifiable only when no radical policy changes are necessary, a situation that rarely occurs, and he proposes another viewpoint which combines scientific planning with the intuition of experienced administrators.

Elam, Stanley, and Gordon I. Swanson. Educational Planning in the United States, Itasca, Ill.: F. E. Peacock Publishers, Inc., 1969.
This book is a report on the Second Symposium on Educational Requirements for the 1970's. It contains five papers and discussions on each of them. The first paper "Objectives for American Education" by Philip G. Smith, discusses the history of the definition of goals for education and provides a philosophical framework within which goals for modern education can be discussed. "The Status of Educational Planning in the United States" by Francis S. Chase surveys the planning methods and organizational structures of several states and of the Federal government in the area of education. "The Planning Process" by Kjill Eide discusses the interrelationship between planning and administrative organizational structure. "Planning Adjustments in the Educational System" by William P. McLure shows how to implement planning within the limits imposed by democracy and fair play. "Some Theory of Planning for Education" by Andre L. Daniere notes the political implications of the planning process.

Emery, James C. Organizational Planning and Control Systems Theory and Technology. New York: The Macmillan Company, 1969.
The author's view is that if the manager hopes to exert a lasting and fundamental influence over the behavior of the organization, he must do it primarily through improvements in the planning process. The manager should not focus attention on ad hoc adjustments to plans, but rather on the process that generates the plans (and with the process that generated that process). In other words, he should concern himself with the causes of inadequate planning and not its symptoms. Planning is discussed as a process in terms of the following steps: (1) determine primitive planning data, (2) propose alternative plans and generate their predicted outcomes, (3) select the "best" alternative, (4) translate the selected plan into a form for lower-level planning, and (5) control the plan.

Green, Thomas F. "The Educational Policy Research Center at Syracuse: Problems and Prospects," Journal of Research and Development in Education, II (Summer, 1969), pp. 49-66.

The purpose of the Educational Policy Research Center at Syracuse is to develop a capability for thinking about the future in such a way as to permit the assessment of educational policies within the context of conjectures about alternative long-range futures.

Guide for Planning Educational Facilities. Columbus, Ohio: Council of Educational Facility Planners, September, 1969.

The document consists of a comprehensive guide for the planning and erection of an educational facility from needs assessment, through the opening of the facility to maintenance and use of the facility.

Jantsch, Erich. "From Forecasting and Planning to Policy Sciences," Policy Sciences, I (Spring, 1970), pp. 31-47.

The author calls for a re-examination of values in order to more effectively use forecasting and planning to enable us to cope with the situations arising from our complex social systems. He defines rational creative action as the interaction among four activities: forecasting, planning decision-making, and action. Forecasting deals with the invention of anticipations (alternate world futures) and possible (feasible) activities fitting them, and with the probabilistic assessment of (assumed or real) actual activities. Planning deals with system design at the levels of total system dynamics, system analysis to define effective changes in system structures (goals), and changes of variables in given system structures. Decision making deals with the recognition of system designs which can be expected to be effective in changing the dynamics of the system in the direction of preferred anticipations and increased dynamic stability of system effective measures. The four activities are said to exist at three levels; the normative or policy level ("ought"), the strategic level ("can"), and the old tactical or operational level ("will"). The article then describes various types of organizations in terms of this four by three model.

Kaufman, Jerome L. "Current Trends in Planning and Their Effect on Planning Literature." An address to the Annual Conference of the Council of Planning Librarians, Cincinnati, April, 1969.

The author enumerates some current planning trends and notes that their popularity may not be directly representative of their importance. Two examples are given to explain his claims. He believes that the future will bring more actual planning and less planning literature, and that the latter will be more technical than it has been so far. He notes the need for developing infor-

mation retrieval techniques to keep pace with the growing quantities of planning literature with regard to providing access to that part of it which will be in actual use. The emphasis is on city planning literature.

Legasey, Edward E. The Delphi Technique Applied to Predicting Effectiveness of Educational Projects. Philadelphia: Fels Institute, University of Pennsylvania, 1969.
This report describes an experiment using the Delphi technique to estimate the effect of proposed educational projects on pupils and system performance in a district of 13,000 pupils. The problems considered were forecasting the need for new teachers, the utilization of educational television, and in-service courses for elementary-level math and reading teachers. The author explains the Delphi technique and its operation in the school district is examined, the differences obtained by using teachers and administrators are explored, and the conclusion is reached that this technique can be useful in achieving consensus on selecting alternate school programs. The questionnaires used and the results obtained are presented in the appendix.

Lewis, Charles E. "The Thermodynamics of Regional Planning," American Journal of Public Health, LIX (May, 1969), pp. 773-777.
This article discusses the regionalization of the delivery of health services. It is shown that the concept of regional medical programs both reflects the opinions of vested interests and leads to changes in the traditional form of health services delivery. A pluralistic approach to health services planning is recommended.

Mayhew, Lewis B. "Toward an Unknown Station: Planning for the Seventies," Journal of the National Association of Women Deans and Counselors, XXXII (Summer, 1969), pp. 145-154.
The author describes eight unresolved issues on the assumption that planners cannot wait for the future and must make assumptions as to the probable outcomes of these issues:

1. Student protest, activism, and direct involvement in academic governance.
2. Black militancy and Black separatism.
3. The nature of statewide governance, control, or coordination.
4. Direct political involvement and intervention in the practice of higher education.
5. The progress of the academic revolution.
6. The ineffectiveness of colleges and universities in achieving their objectives.
7. Institutional involvement with America's increasingly urban condition.
8. The future nature of campus governance.

McNamara, James F., and Jay Smink. "The Future Role of State Education Departments," Planning and Changing, I (October, 1970), pp. 115-122.

This article discusses the services that state departments of education should provide in the years ahead, with the accent on leadership rather than on regulation. Increasing the knowledge of planning procedures in the departments is a priority item, for planning is the major need of the future that the departments should be able to satisfy. A second item is revising curricula to agree with the nation's future manpower needs. Thirdly, the departments should be able to supply management techniques to the school districts.

Mendell, Jay S. "Technological Forecasting--The State of the Art," The Futurist, III (December, 1969), pp. 160-161.

Shortcomings of technological forecasting are discussed under the following topics:

1. Forecasters are quite often unaware of works in progress.
2. Technological capabilities start small, then double and redouble (forecasters tend to predict linearly).
3. The forecaster may be blinded by personal bias originating in his vested interests, his obsession with his own field of activity, or his own obsolete and narrow knowledge.
4. Attempting to predict happenings in the technological system, the technologist forgets that this is merely a segment of the social-technological-economic-political system.

Mockler, Robert J. "Theory and Practice of Planning," Harvard Business Review, XLVIII (March-April, 1970), pp. 148-159.

The author believes that in the development of a science of business planning the basic elements of the planning process were identified, distinctions and interrelationships were drawn among the various levels and kinds of planning done within a company, and guidelines were developed for organizing and carrying out the planning job. He sees that in the future planning organizations will be strengthened, their role will be more clearly defined, and more and better trained planning executives will become available.

Palola, Ernest G., et. al. "Qualitative Planning: Beyond the Numbers Game." Berkeley: Center for Research and Development in Higher Education, University of California, 1968. (ED 025 994).

The author discusses three major crises in higher education and calls for more end-oriented (qualitative) planning, as oposed to means-oriented (quantitative) planning, to meet these crises. The differences between qualitative and quantitative planning are described in terms of the following planning dimensions: (1) scope, (2) priority, (3) style, (4) research, (5) participants, (6) participation, (7) structure, and (8) implementation.

Ringbakk, K. A. "Organized Planning In Major U.S. Companies," Long Range Planning, II (December, 1969), pp. 46-57.

The author defines corporate planning as the formalized process of developing objectives for the corporation and its subparts as well as developing and evaluating alternative courses of action, doing this on the basis of a systematic evaluation of external threats and opportunities and internal audits of strengths and weaknesses. The author argues that organized corporate long-range planning is neither as well accepted nor as well practiced as suggested by the literature, the effort often being sporadic, lacking in coordination, and less formalized and sophisticated than the literature suggests. To substantiate his argument, he describes the results of a survey on planning in corporations. He emphasizes the following aspects of the survey: (1) most crucial problems faced in corporate planning, (2) broadest planning documents available in writing, (3) time horizons for the broadest planning documents, (4) major corporate objectives, (5) inputs and techniques used in developing the plans, (6) formal development of planning premises and assumptions, (7) distribution of planning premises and assumptions, (8) use of accounting data for planning, (9) additional improvements needed in the corporate planning effort, and (10) major changes expected in planning in the next decade. He describes a model which suggests that there are certain properties and inputs which can be considered necessary conditions for effective planning to take place.

Roman, Daniel D. "Technological Forecasting In The Decision Process," Academy of Management Journal, XIII (June, 1970), pp. 127-138.

The author describes technological forecasting in terms of development and impact levels and in terms of vertical and horizontal technology transfer components. He classifies technological forecasts into two fundamental types, exploratory and normative.

Ruliffson, W. A. "An Analysis of the Rationale and Procedures for Long-Range Planning - Found in Selected Corporate Enterprises, Government Agencies or Departments, and School Systems - Which are Appropriate for Educational and Administrative Planning in Local School Systems." New York: Teachers' College, Columbia University, January, 1968. (ED 020 571)

Some of the current planning practices in school systems which are considered to be already involved in long-range planning are reviewed, and a description is given of certain long-range techniques which could be adapted for school systems from current corporate and governmental planning procedures. The author concludes that neither systematic long-range planning nor a formalized structure for insuring an effective planning effort are to be found in most school

systems today. The author suggests the formation of a viable school-community planning structure, a five to ten year range for school district planning, and the elimination of multiple responsibilities for school staff involved in the planning function.

Schwartz, Alfred C. "Planning For Change: What's The Best Technique?" Personnel, XLVII (July-August, 1970), pp. 47-54.
The author discusses four methods which have been used by management for getting additional time for planning without neglecting operational activities: (1) leaning on lower levels, (2) relying on electronic data processing, (3) the committee concept, and (4) the corporate office.

A Survey of Planning and Control Systems for Development Projects. Cambridge, Mass.: Management Systems Corporation, August, 1963.
This document attempts to list and briefly define the various planning and control systems currently being used in large-scale Department of Defense development projects.

Umbeck, Sharvy G. "Long Range Planning and its Implications for Development." Paper presented to the Annual Summer Workshop of the Council for the Advancement of Small Colleges, Sante Fe, August, 1968. (ED 023 193)
It is the author's position that colleges can maintain their stability and effectiveness only by moving ahead faster, and that moving ahead increasingly demands good management. Effective planning is viewed as one step toward good management and a few of the ingredients which are essential to good planning are indicated: (1) clearly stated institutional objectives; (2) a careful inventory of resources; (3) a thorough understanding of operations; (4) a time table; (5) a clearcut philosophy of institutional finance, and (6) a keen sensitivity to the potent social, economic, technological, and educational trends which condition the development of our respective institutions.

II. COMPREHENSIVE PLANNING PROCESS INFORMATION

1. Pupil Needs

Blocker, Clyde E. "Student Needs and the System." Paper presented to the Northeast Area Two-Year College Reading Association, Philadelphia, November, 1968.

This paper explores the psychological needs of students and their effects on two-year colleges. The author feels that much remains to be done to enable such institutions to satisfy the needs of their students. These include a less rigorous admissions policy, a more rigorous definition of educational goals, the utilization of new teaching methods, increased student activities, the institution of a tutorial system, and closer personal relationships with students on the part of the faculty.

Jeffs, George A. Student Attitude Survey: Clark High School. Las Vegas, Nev.: Clark County School District, (n.d.).

Attitudes towards peers, the physical environment, teachers, administrators, curriculum, and educational values were investigated and an attitude-measuring test was constructed. The 2000-member student body of Clark High School was surveyed during the 1965-1966 academic year. Results are given on 65 items related to students' attitudes.

Knox, Alan B. "Critical Appraisal of the Needs of the Adults for Educational Experiences as a Basis for Program Development." (n.p.), (n.n.), (n.d.). (ED 022 090)

The author enumerates the various kinds of "needs" that adults have and the ways that these needs are perceived by the subject and by the school administrator. The difference between the need for education and other needs is the proportion of learning necessary to the satisfaction of the need. A method of appraising the educational needs of adults are given: delimit the domain of concern, describe the potential participants, define the goals of the program, recognize that only some needs will be served, relate needs to program methods, and evaluate the relative frequency of the various needs. The usefulness of community leadership seminars in constructing an adult education program is explored.

Komisar, Paul B. "'Need' and the Needs-Curriculum," *Language and Concepts in Education*, B. Othanel Smith, and Robert H. Ennis (eds.). Chiacgo: Rand McNally, 1961.

This chapter discusses the meaning of phrases like "pupil-needs". The author classes such needs as prescriptive and motivational, and examines the various contexts in which the word "need" might arise in education. This is related to the demand for a "needs-curriculum", i.e. a curriculum designed to "meet the needs" of the students. The author believes that such policies are trivial, indeterminate, or unimportant, depending on playing with the word "need", and are really nothing more than catch-all descriptions for adding topics to curricula. The conclusion is that needs-curricula are specious slogans for whatever is being proposed at the moment.

Mirsky, Joseph. "Pupil-Event Analysis for Needs Assessment." Philadelphia: Research for Better Schools, Inc. December, 1969.

The author presents a brief argument for sampling "pupil-events" in order to learn about the nature of pupil-needs. He suggests that pupil-need assessments examine the functions of the school system as they relate to the things students do.

Popham, James W. "Educational Needs Assessment in the Cognitive, Affective, and Psychomotor Domain." Paper presented at three ESEA Title III Regional Workshops sponsored by the U. S. Office of Education, Ft. Lauderdale, Fla., November, 1969; Philadelphia, December, 1969; Scottsdale, Ariz., December, 1969.

A primary problem, identifying educational preferences, can be remedied by utilizing the behavioral objectives which are being developed by the Instructional Objectives Exchange of U.C.L.A. and then sampling the clientele to determine the priority of the objectives. A second problem, the identification of the learner's status (i.e., level of attainment), can be solved by using criterion-referenced tests based upon the behavioral objectives. The third problem involves a contrast of preferences with status, i.e., a comparison of desired outcomes to current learner status, can be solved through the administration of criterion referenced tests.

Special Education and Fiscal Requirements of Urban School Districts in Pennsylvania. Philadelphia: Fels Institute of Local and State Government, University of Pennsylvania, 1964.

This report focuses on the needs of urban students. It shows in what way their needs are different from those of non-urban students, and it explores the difficulties of financing urban schools. Suggestions are made on both curriculum change and financing, and the research methods used are described in detail. The report concludes that urban schools in Pennsylvania are seriously disadvantaged financially under the current methods of providing state subsidies in education because of the greater need for student services in urban areas and because of the greater tax burdens for other municipal services in urban areas. Extensive quantities of data are presented to support these conclusions. The authors recommend that a new state subsidy system be worked out in Pennsylvania that will take cognizance of these problems.

Student "Speak-Up": A Sub-Project Assessing Educational Needs as Perceived by Secondary Students: PROJECT DESIGN. Interagency Planning for Urban Educational Needs, Number 5. Fresno, Calif.: Fresno City Unified School District, May, 1968.

This report describes the perceived educational needs of secondary school students in Fresno, California. Small-group discussion sessions, comprised of students from the area's secondary schools, identified specific educational needs listed in the following categories: (1) curriculum, (2) job and career training, (3) minority group education, (4) school responsibilities, (5) development of ethical values, (6) extracurricular activities, (7) counseling and guidance, and (8) general improvements. The frequency of response for each need statement is provided along with a description of the composition of participating "groups."

2. Overall Objectives

Downey, Lawrence W. "The Task of Public Education." Chicago: University of Chicago, Midwest Administration Center, April, 1960.

This detailed study was performed to determine the tasks of public education (elementary and high school) and the importance of these tasks (priorities) as seen by a representative sample of educators and non-educators. A conceptual framework outlining the tasks of public education was formulated from an historical overview and a synthesis of ideas. The study utilized the Q-sort technique of forced choice for determining goal priorities of schools.

Gilman, Glenn. "The Manager and the Systems Concept," Business Horizons, XII (August, 1969), pp. 19-28.

The systems concept goes beyond the traditional definitions of organization, and views the enterprise as the central agency of an extended open system, encompassing a peripheral membership that interacts with, supports and constrains the agency and its central membership. It envisions energy as used to power the processes of organization, as consumed by maintaining the structure of organization and as necessary to attract and hold the membership which identifies the organization as an agency. The boundaries of an organization, when viewed as an extended system containing a central membership that interacts with a peripheral membership, are determined by the area within which this process of interaction will result in the mutual establishment or modification of working understandings. The author reminds us that people have goals, organizations have functions, and people ascribe goals to organizations. He distinguishes between the function of an agency as an entity, which the labels mission, and the related functions of the subunits into which it will almost always be operationally divided.

Goals for Public Education in Texas. A Report by the Subcommittee on Goals to the Governor's Committee on Public School Education, U. S. Office of Education. San Mateo, Calif.: Operation PEP, December, 1968.

This report traces the historical evolution of educational goals. It is intended as an aid to those educational planners and managers who must translate educational objectives into operational terms. A bibliography of consulted references is attached to the study, as are appendices which contain goal statements from quoted sources.

Johnson, Stuart. Freezing the System: Specifying Outcomes. Santa Ana, Calif.: Orange County Schools Office Supplementary Educational Center, March, 1969.

Different types of objectives are defined and discussed in order of increasing specificity of impact upon intended learners: (1) policy objectives, (2) program objectives, (3) curricular objectives, (4) instructional objectives, and criterion measures.

3. Assignment of Weights to Goals, Objectives and Outcomes

Baumol, William J. "Neumann-Morgenstern Cardinal Utility," Economic Theory and Operations Analysis. Englewood Cliffs, N. J.: Prentice-Hall, Inc., 1961.

In Chapter 17, the author presents a classic method, emerging from economic cardinal utility analysis, of assigning utility or worth to predictable outcomes. Baumol mentions that a calculation based on the utilities of alternative outcomes, rather than the magnitudes of outcomes, may be more useful to decision-makers.

Churchman, C. West, Russell L. Ackoff, and E. Leonard Arnoff, "Weighting Objectives," Introduction to Operations Research. New York: John Wiley and Sons, Inc., 1957.

In Chapter 7, a method is presented for estimating the relative value of objectives. Initially, the authors assume that judgments are made by one evaluator, but this precondition is relaxed in a later discussion of group values. Their technique consists of a "systematic check on relative judgments by a process of successive comparisons." An easy-to-follow outline both for a small and a large number of objectives is provided along with two illustrative examples for further understanding.

Dalkey, N. "Analyses From a Group Opinion Study," Futures, I (December, 1969), pp. 541-551.

The author conducted various experiments in the use of a Delphi questionnaire. He experimented with the idea that point estimates were less accurate than interval estimates. He tested various hypotheses including learning as a function of feedback, time as related to the accuracy of responses, and overall accuracy as a function of confident self-groups. Furthermore, the author concludes that even though the Delphi method has dealt only with factual judgments, it may be applicable to the weighting of value judgments (organization objectives). If value judgments are indeed "correct," then there is the need for tests of individual stability, group convergence and group reliability.

Grayson, Jackson C. Decisions Under Uncertainty: Drilling Decisions by Oil and Gas Operators. Boston: Harvard Business School, 1960.

Grayson's study of decision-making in the oil drilling industry is a classic if only for its clear presentation. This analysis of decisions, using Bayesian statistics, is one of the first applied efforts found in the literature. In addition, Grayson does some of the first experimental empirical work on individual utility functions.

Helmar, Olaf. "Convergence of Expert Consensus Through Feedback." Santa Montica, Calif.: The Rand Corporation, September, 1964.

This paper investigates part of the process by which a panel of experts produce a consensus report on a subject that they are studying. It addresses itself partially to the problem: How is the nature of the convergence toward consensus affected by the incompetence of some members of the panel? The results were: (1) that the Delphi process itself strengthens tendencies to consensus, (2) that the convergence is more often to the correct answer than not, and (3) that the reliability of the process is enhanced by having each respondant rate himself on his level of competence.

Rescher, Nicholas. "Delphi and Values." Santa Monica, Calif.: The Rand Corporation, September, 1969.

The author's primary aim is to provide a discussion of theoretical background considerations for the application of the Delphi method. Seven aspects are considered on pages 16 and 17. Among these are operative values, value criteriology, divergences of group value posture, value consensus, and third party evaluation of conflicts of interest.

Roberts, Fred S. *What If Utility Functions Do Not Exist?* Santa Monica, Calif.: The Rand Corporation, 1970.

The author identifies utility functions with the situation in which alternatives can be completely ranked (or ordered) and asks how situations in which the "panel of experts" disagree or in which their judgments are inconsistent are dealt with. He explains a technique by which utility functions can be obtained for such situations. His approach utilizes partial ordering of the lowest dimension. The procedure discussed is a formal one and is mathematically justified in this paper and diagrams and examples are provided. A utility measurement bibliography with 40 entries is provided.

Roemer, Milton I. "A Coordinated Health Service and the Problem of Priorities," *Israel Journal of Medical Sciences*, I (July, 1965), pp. 643-647.

The author discusses the question of how priorities are to be assigned to various health services if current independent services are to be integrated with one another into a comprehensive health services plan. He advocates assigning priorities to services that would assist socially-valuable groups in the population, such as the most highly skilled or educated workers and necessary government employees and leaders.

Waldron, James S. "The Delphi Process: Some Assumptions and Some Realities." Paper presented at the Annual Meeting of the American Educational Research Association, New York, February, 1971.

The Delphi Process is a means of collecting opinions, which many feel combines the advantages of questionnaires (anonymity) with those of personal interviewing (feed-back to correct errors) and statistical analysis (correct evaluation of results). The procedure aims at producing a consensus upon which action can be based without repressing minority opinions. This paper investigates the effect on the process of the duration of the intervals between rounds of interrogation. The complexity of the informants' use of information are assumed to be primary considerations and were in fact found to interact with the duration question. The report concludes that the nature and speed of convergence to consensus depend on the types of persons questioned, on the duration of the intervals between rounds of interrogation, and on the nature of the questions being asked.

Winkler, Robert L. "The Quantification of Judgment: Some Methodological Suggestions," Journal of the American Statistical Association, LXII (December, 1967), pp. 1105-1120.
Winkler's analysis pertaining to aspects of subjective or personal probabilities seems to have a great deal of relevance and carry-over to the assignment of subjective ratings. A brief bibliography at the end of this article is crammed with references to theory on subjective probabilities and Bayesian statistical analysis.

4. Performance Criteria and Educational Process Criteria

Breneman, David W., and George B. Weathersby. "Definition and Measurement of the Activities and Outputs of Higher Education." Discussion Paper #10. Berkeley: Ford Foundation Research Program in University Administration, University of California at Berkeley, August, 1970.
The authors concern themselves with some of the problems in responding to the public and participant demands for accountability and an increasing voice in resource questions in universities. Particular emphasis is given to the need for activity and output measures. The authors propose a comprehensive, operational taxonomy of the attributes of higher education as a basis for operational definition and measurement. Values and priorities are also discussed. An appendix suggests examples of instructional outputs, institutional environment outputs, research outputs, and public service outputs.

Croft, Don B. Operationally Defined Constructs to Describe Student Social Behavior. Unpublished Doctoral Dissertation, University of New Mexico, Albuquerque, June, 1968.
The purpose of this study was to operationally define the constructs "Achievement," "Inclusion," and "Affiliation." Achievement is defined as behavior oriented towards academic achievement or a feeling associated with task accomplishment. Inclusion is defined as behavior associated with a feeling of togetherness or rapport with another person. Affiliation is defined as behavior associated with close, personal, emotional feelings of friendship or affection for other people. These three constructs describe the common elements among many social behaviors, and allow one to infer the motivational impetus for the behavior. Using a factor analytic technique, the author constructed an inventory composed of behavior description items to measure each construct. Accurately measured constructs impose order on a complex domain, and provide the basis for additional objective and systematic study. The use of operationally defined constructs also facilitates the communication process among educators and among students.

Eiss, Albert F., and Mary Blatt Harbeck. *Behavioral Objectives in the Affective Domain*. Washington, D. C.: National Science Supervisors Association, 1969.
The authors discuss the problems of defining desirable affective behavioral objectives for a science program and of measuring the degree to which the program has been successful at teaching such items. A simple psychological learning model is presented and used to construct evaluative test prototypes, which are presented in the appendices. The authors believe that the inculcation of certain values, interests, and attitudes by a science program should be evaluated, but that the student should not be graded on this material.

Furno, Orlando F. "Program-Planning-Budget Systems: Boon or Bane," *Central Ideas*, XX (October, 1969), pp. 1-5.
The author's major concern is that education's goals are currently stated in very vague terms. He feels that it is one thing to talk about school quality and another to define, develop and delineate education's goals and objectives. Over the years, education's aims have been eloquently stated but poorly defined. School quality, dynamic curriculum, life education, cognitive domain, affective domain, the realization of each child's true potential, and similar educational ideals are not easily measured. With this state of affairs cost-effectiveness relationships cannot be correctly determined.

Kamrany, Nake M., and Alexander N. Christakis. "Social Indicators in Perspective," *Socio-Economic Planning Sciences*, IV (June, 1970), pp. 207-216.
The authors emphasize the need for the development of an adequate barometer to measure the overall well-being of societies and nations. They describe the role of social indicators in the process of national policy planning.

Vincent, William S. "Indicators of Quality," *IAR - Research Bulletin*, VII (May, 1967), pp. 1-5.
The author describes quality-of-education indicators based on classroom behavior. The indicator was initially restricted to measuring degrees of innovation; however, the idea that innovation and quality are synonymous was not found to be generally acceptable. Four items were defined for measurement: (1) dealing with individual student differences, (2) the warmth of interpersonal relationships in a school, (3) creativity and the encouragement of individual expression, and (4) group interaction.

5. Cost and Accounting

Davis, Otto A., M. A. H. Dempster, and Aaron Wildovsky. "A Theory of the Budgetary Process," The American Political Science Review, LX (September, 1966), pp. 529-547.

This article explores the budgeting processes of Federal government agencies and shows that they can be expressed in a stable, linear and stochastic mathematical model. The budgetary processes are described and the reader is taken step-by-step through the equations needed. Suggestions are developed from the model for improvements in Federal agency budgeting.

Planning and Budgeting Manual: 1971-1972. Miami, Fla.: Dade County Public Schools, 1971.

This manual describes the PPBS procedures for Dade County. It describes how the budget is to be prepared (giving copies of the forms used), the time frame within which the budget is prepared (month by month), the objectives of the procedure at each step, the monthly reporting system for expenditures, samples of computer output, code numbers, and administrative procedures. The study was part of the Association of School Business Officials national PPBS design.

Planning-Programming-Budgeting System for the Business and Finance Division. Las Vegas, Nev.: Clark County School District, 1970.

This report lists the costs of each activity carried out by the Clark County Schools' business and finance division, explains each costing procedure, and gives samples of the forms used. The study was part of the Association of School Business Officials national PPBS design.

Scammon, James P. "Automated Budget Preparation System," Monitor, III (October, 1970), pp. 11-15.

The Kenosha, Wisconsin, Unified School District found it advisable to automate the budget-making process to increase trust between principals and Board of Education personnel with respect to the allocation of, and requests for, funds. This was done by providing comparison data for the previous two years, status reports on requests for funds, means of changing the budget, and introducing PPBS methods. More specific information is available from the author.

Sisson, Roger L. Suggested Improvements for Cost Estimating Procedures in the EPPB System. Philadelphia: Government Studies and Systems, Inc., 1970.

This paper discusses the problems of computing overhead, support program costs and of calculating future project costs. A method of determining such costs is presented and examples are provided. The method is supported by a mathematical model.

6. Management Information Systems

Bolton, Dale L. "Information Systems for Decision Making," University of Washington College of Education Record, XXXVI (November, 1969), pp. 7-11.

The author believes that decision theories have two severe shortcomings which are related to the informational aspect of making decisions: (1) many descriptions of decision making begin at the point where information is available to the decision maker and assume that the decision maker does not need to be concerned with problems of its acquisition; and (2) decision theories generally omit any consideration of the evaluation of decisions to determine whether the anticipated results occurred. The author discusses the following components of an information system for decision making: (1) the stages of the decision process, (2) the functions to be performed, and (3) the sources of information. The stages of the decision process are (a) analysis, (b) choice, (c) implementation, and (d) evaluation. The functions to be performed are (a) acquisition, (b) storage, (c) retrieval, and (d) analysis and decision making. The sources of information are (a) external and (b) internal.

Brooks, Elizabeth A. (ed.). MSEIP Documentation of Project Development and General System Design. Des Moines, Iowa: Midwestern States Educational Information Project, 1969.

The Midwestern States Educational Information Project (MSEIP) was a combined effort of 13 state educational agencies (SEAs) to develop and implement an integrated information system, which reflected the need for timely and accurate information for decision-making. The organizational structure of the Project was significant in that an active working relationship was established between the Federal Government, SEAs and local educational agencies.

Chorness, M. H., and C. H. Rittenhouse, and R. C. Heald. "Decision Processes and Information Needs in Education: A Field Survey." Berkeley, Calif.: Far West Laboratory for Educational Research and Development, (n.d.).

This report seeks to determine what sources of information are utilized by school district planners and administrators of various levels, what types of information are sought, whether such information is readily available, and whether such information is used in the decision-making processes. The results showed that personal contact was the source of information most used; that personnel and curriculum planning were the areas in which information was most often sought; that research publications are hardly every consulted; and that neither administrators nor teachers are in general actively looking for nation-wide educational information systems. The least-used sources of information were in fact the Federal programs. School people report that the less-used information sources are difficult to access, to understand, and to evaluate for validity, or concern areas over which they have no control. On the other hand lack of necessary information was most often felt in questions regarding materials for specific courses and techniques for evaluating and implementing curriculum innovations, regarding selection of personnel, and deciding on salaries.

Cummings, C. Peter. "A Review and Analysis of Decision Making with a View Toward a Comprehensive Management Information System." Philadelphia: Research for Better Schools, Inc., May, 1970.
This paper is addressed to decision-making and decision-analysis in connection with Integrated Municipal Information Systems (IMIS). Sections are devoted to categories of decisions, decision process models, decision-tree analysis, and decision analysis methodology.

Green, John F. "Management Information Systems and Corporate Planning," Long Range Planning, II (June, 1970), pp. 74-78.
The author argues that in the future the corporate planner will play a dominant part in determining whether a company enjoys the benefits as well as incurs the costs of a sophisticated management information system (MIS).

Guertin, Wilson H. "Straight Talk About Computer Information Systems," Educational Technology, IX (1969), p. 25.
This article describes the nature of computer information systems and some of the difficulties arising from their implementation in educational environments. Guertin defines four types of information systems: a management information system (for sound decision-making), a pupil information system (to improve teacher-pupil situations), a guidance information system (for pupil understanding), and a total information system. Furthermore, the author states that educators must make a commitment to the information system's overall design both as to "software" and "hardware." Guertin recommends that existing systems improve standardization and uniformity, that the Federal government fund software development, and that schools and universities combine to implement total information systems.

Hamer, Robert W., and Ralph C. Bledsoe. "Information Systems in Management," SDC Magazine, XIII (January, 1970), pp. 17-21.
Two management information systems of the System Development Corporation are described as being applicable in either the public or private sectors and as allowing the generalist manager to perform his own data acquisition, organization, retention and retrieval.

Hereford, Karl. "New Management Information Systems Due by End of 1972," Nation's Schools, LXXXV (May, 1970), pp. 63-64.

Four management information systems dealing with federal funds for education are described: (1) a consolidated program information report, (2) a comprehensive evaluation survey, (3) a guide for preparing narrative reports, and (4) a comprehensive management review.

Jacoby, Joan E. "The Neighborhood Early Warning System--Design and Development," Socio-Economic Planning Sciences, IV (March, 1970), pp. 123-129.

The Neighborhood Early Warning System (NEWS) is described as an attempt by a local city government to integrate socio-economic information extracted from various department files. The two primary goals of the geographic-based urban information system are: (1) to pin-point and predict which areas inside a city are beginning to deteriorate; and (2) to measure the effectiveness of programs designed to remedy urban problems.

Kurth, Richard W. "A Report on the Florida Educational Needs Study, 1968-1970," Paper presented at the Annual Meeting of the American Educational Research Association, New York, February, 1971.

The Florida study used student behavior, needs, population statistics, systems evaluation, and public opinion data to construct a state-wide assessment model to be used for planning future educational programs in the state. The study group found that data collection problems were complicated by an abundance of unusable data, so that the first result of the study was a realization that current data collection practices in the state needed changing. Further reports will be available as the data is analyzed.

Lambert, Nadine M., et al. "Anecdotal Processing to Promote the Learning Experience (APPLE)." Berkeley: University of California, June, 1970.

This item describes a computerized system of storing information about a student for later retrieval by teachers, as opposed to systems that store information to be used by administrators. Such information might include test scores, report card data, attendance records, and teachers' observations. The APPLE system was designed to be easy to use, inexpensive, and usable on any number of computers. The system emphasizes the storage of observations of student behavior by teachers, psychologists, etc., in the areas of academic behavior, emotional behavior, physical appearance, and general behavior. Provisions are made for reserving the privacy of the data on file. A users' manual is in preparation. The appendix contains a sample output.

Minter, John, and Ben Lawrence (eds.). Management Information Systems: Their Development and Use in the Administration of Higher Education. Boulder, Colorado: Western Interstate Commission for Higher Education, 1969. (ED 042 427)

The papers in this report were prepared for a seminar dealing with the problems and possibilities of analytical models and management information systems for use in higher education institutions. An appendix lists institutions that have made significant progress in the development of operational data systems. A selected, general and related bibliography is included.

Ott, Jack M. "Taxonomy of Administrative Information Needs: An Aid to Educational Planning and Evaluation." Paper presented at the Annual Meeting of the American Educational Research Association, Minneapolis, March, 1970.

The author attempts to develop a classification system covering the range of administrative information needs involved in the efforts of local school administrators to bring about positive changes in their school systems.

Sandberg, John (ed.). Schools and Comprehensive Urban Planning. Northwest Regional Educational Laboratory. Corvallis, Oreg.: DCE Publications, September, 1969.

A six page chapter "Guidelines for Development of an Information System for Urban Community Planning," written by Lyndon Musolf, provides some useful lists of considerations related to the development of a management information system.

7. Implementation

Bass, Bernard M. "When Planning for Others," The Journal of Applied Behavioral Science, VI (April-May-June, 1970), pp. 151-157.

The author believes that productivity and satisfaction are lower when planning for others because: (1) sense of accomplishment is less when executing someone else's plan; (2) there is less tendency to try to confirm the validity of another's plan by executing it successfully; (3) there is less commitment to see that the plan works well; (4) there is less flexibility and less room for modification and initiative to make improvements in an assigned plan; (5) there is less understanding of an assigned plan; (6) human resources are not so well utilized; (7) there are more communications problems and consequent errors and distortions in following instructions; and (8) there are competitive feelings aroused between planners and doers, to such an extent that it appears that if the former "win," the latter "lose."

Baynham, Dorsey. "PPBS and Several Good Reasons It Shouldn't Scare You Off," American School Board Journal, CLVIII (August, 1970), pp. 27-29.

The author discusses some of the pitfalls of program-planning-budget systems (PPBS) in their school applications: (1) image difficulties, (2) time and money, and (3) goals and objectives.

Beehler, Paul J. "EDP: Stimulating Systematic Corporate Planning," The Conference Board Record, VI (September, 1969), pp. 38-44.

Factors which have frustrated attempts at corporate planning are depicted as follows: (1) inaccurate concepts of long-range corporate planning; (2) basic conflict between long- and short-range plans; (3) exclusion of lower-level management in plan development (4) pre-emption of time by day-to-day demands; and (5) organization conflict between line and staff authority and responsibility.

Berteaux, Raoul. "Selling Long Range Planning to Management," Long Range Planning, II (December, 1969), pp. 32-37.

Organizing a new long-range-planning service involves the following steps: (1) select the personnel, (2) study the existing methodology, (3) establish a model of the enterprise, and (4) study possible strategies. The author believes that these activities must be done in such a way that they are useful to the enterprise. Their success depends upon several points: (1) equilibrium between projective and prospective studies; (2) precision, simplicity and flexibility; (3) real time and relative time; (4) live in the future; and (5) convince.

Burkhalter, David A., et al. "What Is The Importance of the Planner To City Management?" Public Management, LI (December, 1969), pp. 3-8.

The author feels that planning for things is easy, but planning for man is difficult. He explains why and how planning, like no other community function, must address itself to the problems of change. He cautions, however, that in doing so, it is very easy to become involved in the solutions before we understand the problems.

Conant, Ralph W. "The Politics of Health Planning," Hospital Progress, L (January, 1969), pp. 51-56.

The author's view is that community health planning has not caught on in many places; where it has been tried, its natural enemies have almost always succeeded in frustrating its objectives

Croston, J. D., and G. Gregory. "A Critique of Operational Research and Decision-making by Adelson and Norman," Operational Research Quarterly, XX (December, 1969), pp. 415-420.
The authors discuss and criticize a particular operational research and decision-making model and some of its implications. Discussions focus on involving many people within an organization in planning and decison-making. One of the significant points in the paper is a distinction made between the usual "vertical" information flow within an organization and the "horizontal" information flow needed for planning by objectives.

Davies, Jon. "Planning Participation in Public Decision Making," Long Range Planning, II (June, 1970), pp. 23-27.
The author argues that it is neither possible nor desirable to try to produce the future now and that the very attempt to do so is quite likely to ensure that the future will be horrible and inhuman.

Dwyer, Charles. "Ethics and Values: A Conceptualization and a Method." Philadelphia: University of Pennsylvania, 1970.
This item deals with the problem of making decisions based on data, by describing a method for the analysis and evaluation of proposals in education. An example is given and all steps of the method are fully discussed in terms of this example. The method itself attempts to cover all possible reasons for and against a proposal, to identify the underlying assumptions, to explore the meanings of terms used, to assess the effects and costs of the proposal, to investigate what its implementation would require, and to assess alternatives to it. The method is presented in the form of types of questions to be asked by the decision-maker.

Eurich, Alvin C. "Plan or Perish," College and University Journal, IX (Summer, 1970), pp. 18-22.
The steps in planning at the college or university level are portrayed as follows: (1) commitment to plan by the governing board and key administrative officers, (2) designation of an administrative officer to be responsible for planning, (3) collection of all essential information needed to formulate an adequate plan, and (4) formulation of specific down-to-earth recommendations and preparation of a time table for carrying them out. The characteristics of an adequate plan are described as follows: (1) a description of the college as it now exists; (2) a clear statement of the goals of an institution which restricts its functions and does not promise to do all things for all students; (3) a set of assumptions for the future; (4) the projection of an educa-

tional program with methods for carrying it out and evaluating it regularly; (5) a statement of financial requirements to carry out the plan; and (6) a provision for an adequate and regular accounting to the constituency of the college on how well or poorly the institution is doing in carrying out the plan.

Grimes, Robert. "Structuring Teachers into the Decision Making Process," Secondary Education, XLIV (December, 1969), pp. 346-352.

The Academy of Instruction, an organization established by the San Mateo Union High School District, California, is described as a means of more fully incorporating the abilities of school faculties into planning and operation.

Le Baron, Walt. "Technological Forces and the Teacher's Changing Role," Journal of Teacher Education, XX (Winter, 1969), pp. 451-464.

The author believes that the greatest need at this time is for careful descriptions of total educational systems which facilitate the development of alternative plans for dealing with persistent problems. The forces opposing change and innovations are discussed and classified under seven headings: (1) the nature of the institution, (2) the objectives of the system, (3) the problems imposed by present change and development models, (4) the management of resources, (5) our present understanding of the learning process, (6) the emerging nature of man imposed by technological awareness, and (7) the changing role of the teacher. The author suggests that school boards can help by: (1) encouraging positive thinking about technology, (2) seeking thoroughgoing analysis and change, (3) implementing PPBS, systems analysis, and other positive planning procedures, (4) developing outside lines of communication, (5) promoting and supporting in-service education programs, (6) concentrating on the processes, not the institutions, and (7) building community support through information about change.

La Brecque, Richard. " Social Planning and the Imperium Humanum: John Dewey, Circa 1960's," Educational Theory, XIX (Fall, 1969), pp. 363-371.

The author is skeptical of the Planning-Programming-Budgeting System (PPBS) because he feels that PPBS is not the result of any general social policy regarding the future of our nation and that its implementation will be restricted to an unrepresentative elite group, resulting in limited perspective regarding criterion variables in social planning. The limited mental and moral outlook of status-quo oriented planning elites may prevent the innovative, spontanious capabilities inherent in PPBS from being realized.

Levin, Peter, and David Donnison. "People and Planning," Public Administration, XLVII (Winter, 1969), pp. 473-479.

The authors evaluate the "Skeffington Report" on people and planning in the light of recent developments in the British approach to planning. The report put heavy emphasis on extensive participation and publicity throughout all phases of the planning process. The author's main criticism is that the report did not seriously consider the possibility that participation and publicity may frustrate action. In their view, the report assumes too readily that the conventions of a Quaker meeting can be adopted in the commercial, political, professional, and racial rough-house in which planning decisions are made.

Obinani, Chu. Felix. "Planning Education in the Environment of Poverty: Training Resident Planners in Bedford-Stuyvesant," Journal of the American Institute of Planners, XXXVI (July, 1970), pp. 261-268.

The author feels that educational planning must be reconceptualized to include the following factors: (1) recognizing the political influence on educational planning; (2) overcoming inadequate internship periods for students; (3) encouraging recruitment of members of client groups into the professional schools; (4) sponsoring and supporting training of ghetto residents as para-professionals; and (5) making it possible for ghetto residents to share in the processes of problem definition, goal formulation, and program implementation.

Seidman, David R. "PPB In HEW: Some Management Issues," AIP Journal, XXXVI (May, 1970), pp. 168-178.

While viewing planning-programming-budgeting (PPB) from the perspective of a top level federal office, the author discusses internal agency conflicts, measurement problems, and political difficulties in introducing an innovative management technique into a very complex and often non-quantitative governmental structure. The author believes that the existing linkages between PPB and the legislative process are weak, although potentially very strategic.

Tenzer, A. J., J. B. Benton, and C. Teng. "Applying the Concepts of Program Budgeting to the New York City Police Department." Santa Monica, Calif.: The Rand Corporation, June, 1969.

This memorandum describes, in a very pragmatic manner, three phases of the PPB System developed for the New York City Police Department: the stages of developing a program-budgeting format for five essential programs, a cost-estimating methodology for two major cost categories, and an on-line computer model for estimating cost implications of alternative resource allocations.

Von Allmen, Erwin. "Setting Up Corporate Planning," Long Range Planning, II (September, 1969), pp. 2-8.

The author offers suggestions for planners who undertake their activities in organizations where planning as a function is just getting off the ground. He emphasizes that the planner must assess the risk-taking capacity of top management and adjust his undertakings in accordance with this capacity. He presents six guidelines that the planner must observe from the outset:

1. His program must be positive in nature.
2. He must immediately produce a tangible product.
3. The new planning manager, especially if he is from outside the organization, must be extremely wary of proposed internal political alliances to advance his program.
4. He should quickly determine where the real power of the organization lies and direct the planning program to the probable needs of these individuals.
5. The planning manager and his supporting staff must assume the attitude of good staff.
6. Every modern organization has a committee of some kind which moves its operations.

SECTION FIVE
MANAGING FOR CHANGE

I. EDUCATIONAL PROJECT MANAGEMENT

1. General Management References

Hanika, F. de P. New Thinking in Mangement: A Guide for Managers. London, England: Hutchinson and Co., Ltd., 1965.

This book, as the title indicates, is intended to serve as a guide to those persons in managerial positions. The first part is concerned with systems analysis: an introduction to the concept in general and then to characteristics of business organizations as systems. The second part presents developments in management "technology" as seen from the system analyst's viewpoint. The third section illustrates practical applications of the new management techniques.

Johnson, Richard A., Fremont E. Kast, and James E. Rosenzweig. The Theory and Management of Systems. Second Edition. New York: McGraw-Hill Book Company, 1967.

This text deals with management systems and their applications in business situations. The basic management principles (planning, control, etc.) are discussed in terms of interrelated systems. A section is devoted to applications and deals primarily with project management. Project management is defined and discussed in detail. Several case studies are provided dealing with project management and other management techniques.

Kast, Fremont E., and James E. Rosenzweig. Organizations and Management: A Systems Approach. New York: McGraw-Hill, 1970.

These sections concerning program/project management commence with a discussion of the organization of project management. An organization chart is provided. The operational characteristics of the project management organization are discussed in terms of the interpersonal relations existing among the program manager, his staff, and the functional elements. Psycho-social problems which occur as a result of introducing project management are discussed.

Koontz, Harold, and Cyril O'Donnell (eds.). Management, A Book of Readings. New York: McGraw-Hill Book Company, 1964.

The authors have included in this book of readings articles based on the major management functions: planning, organizing, staffing, directing, and controlling. Of special interest are the sections on planning and controlling which deal with operations research and network controls respectively.

Koontz, Harold, and Cyril O'Donnell. Principles of Management. New York: McGraw-Hill Book Company, 1964.

This basic management text is designed to provide a conceptual framework for the fundamentals of management. This knowledge is then related to the management functions of planning, organizing, staffing, directing and controlling. The book gives a comprehensive overview of the management function.

Lane, Willard R., Ronald G. Corwin, and William G. Monahan. Foundations of Educational Administration: A Behavioral Analysis. New York: The MacMillan Company, 1967.

This book approaches educational administration from a descriptive viewpoint. Situations in school systems are described as they actually exist and are examined in order to determine the management principles which may be applied to them. A major portion of the book is devoted to communication. The structure of communications, the channels, feedback, loops, etc., are examined. Administrative organization and the bureaucracy of school systems are discussed as they actually exist, and methods are indicated for streamlining organization structure.

Newman, William H., Charles E. Summer, and E. Kirby Warren. The Process of Management: Concepts, Behavior, and Practice. Second Edition. Englewood Cliffs, N. J.: Prentice-Hall, Inc., 1967.

This is an introductory graduate level text dealing with the theory and process of management. The book is devided into nine basic sections: organizing; structural design; human factors in organizing; planning; elements of decision making; planning; decision making in an enterprise; leading; and measuring and controlling. The entire text warrants reading by the school administrator, since it provides an overall framework for personnel management. Chapter 23 provides an introduction to PERT and budgetary control. Case studies are inlcuded at the end of each section.

Odiorne, George S. Management By Objectives. New York: Pitman Publishing Corporation, 1965.

The author describes management by objectives, a system which defines individual executive responsibilities in terms of corporate objectives. When inaugurated in a company, it enables the manager to plan and measure his own performance, as well as that of the subordinates, in terms of concrete results. More than evaluations of executive quality, these performance measures become operating guides for total company action.

Sisk, Henry L. Principles of Management. New Rochelle, N. Y.: South-Western Publishing Company, 1969.

The approach used in this book combines the familiar and traditional analysis of the management process and the presentation of management principles with the newer systems concept of management in an endeavor to make it truly a systems approach to the management process. The process of management is described and analyzed in the usual temporal sequence of planning, organizing directing and controlling. Principles of management are defined as fundamental observations concerning causal relationships between managerial action and the subsequent effect of that action upon the attainment of organizational objectives. Organizations are regarded as cybernetic systems with the management process occurring within organizational systems. The combining of the traditional principles of management and the systems approach to the study of management permits the development of guides for the successful practice of management and at the same time provides a conceptual framework for a better understanding of the management process and the organization in which management occurs.

2. General Introduction to Project Management

Anthony, Robert N. Planning and Control Systems: A Framework for Analysis. Boston, Mass.: Division of Research, Graduate School of Business, Harvard University, 1965.

The author is concerned with the problem of designing the best systems for organizational planning and control. He makes four generalizations: (1) The management control system, which serves to obtain and to use effectively resources in the achievement of the organization's objectives, deals with the ongoing operation of the entire organization and should therefore be the starting point in the overall system. (2) This management control system should be related to, but should not include the processes for strategic planning (the process of deciding on organizational objectives, on changes of the objectives, and of resources and the policies for their use), operational control (the process of assuring that specific tasks are carried out efficiently and effectively), and financial accounting. The notion of a single all-purpose system is not realistic. (3) The central management control should be a financial system, since money is the only common denominator. (4) Computers and mathematical models cannot be the essence of this control system.

Archibald, Russell D. "Planning, Scheduling, and Controlling the Efforts of Knowledge Workers." Long Beach, Calif.: M. J. Richardson Inc., October, 1969.

This paper introduces the reader to project management. Projects are defined and their management discussed. The author indicates that project management is based upon three concepts:

1. The project manager has control responsibility for the total effort.
2. The project manager and his staff effect total central planning and control.
3. Performance of work is accomplished by decentralized diverse organizations within the firm under the direction of the project management.

These are discussed in terms of total project management. Short sections include discussions of planning, scheduling, and controlling under project management.

Baumgartner, John Stanley. Project Management. Homewood, Ill.: Richard D. Irwin, Inc., 1963.

The author discusses project management in terms of planning, control, developing the project team, fiscal management and cost control, profit maintenance, customer relations, stopping work, and extending the work beyond the contract. The various tasks of planning including make-and-buy decisions, scheduling, budgeting, organization, facilities, etc., are discussed. Project control using various charting and network techniques is discussed. The subject of formulating and motivating the project management team is discussed in terms of objectives, incentives, and communications. The critical problems involving customer liason, documentation of efforts, and profit maintenance are also included.

Cleland, David L. "Why Project Management?" Business Horizons, VII (Winter, 1964), pp. 81-88.

This paper indicates in very explicit terms, the functions and interrelationships of a project manager. The author states that the project manager acts as a focal point for the concentration of attention on the major problems of the position, and continues with an in-depth description of the position. The responsibility and authority of a project manager are discussed and the author offers certain criteria for delineating them to the project manager. Organizational arrangements best suited to be effective project management are discussed.

Cook, Desmond L. "The Nature of Project Management." Columbus, Ohio: Ohio State University, June, 1968.

Project management is introduced and is defined in terms of its four characteristics: projects are finite in character, projects are complex and involve many tasks, projects consist of a series of specific tasks, and projects are generally non-repetitive or one-of-a-kind activities. Placement of projects within the organizational structure is dicussed; the relative merits of various settings are delineated. The qualifications for a successful project manager are indicated.

Flaks, Marvin. "Project Management in the 1970's." Paper presented to the Annual Seminar Symposium of the Project Management Institute, St. Louis, October, 1970.

This paper describes the innovations which the author feels will affect project management in the future. Hardware and equipment developments include improvements in computers; they will become more sophisticated and much easier to use and there will be more integrated planning and management of projects. Organizational functions and structures will see an increased emphasis on the projects which will become more numerous and more complex. There will be an effect on people, too: the project manager will bear an increasingly important role, and project specialists will be more and more widely recognized as professionals.

Lambourn, S. "Resource Allocation and Multi-Project Scheduling - A New Look in Planning and Control," The Computer Journal, V (January, 1963), pp. 300-304.

This paper gives a general description of the new network analysis technique known as RAMPS (Resource Allocation and Multi-Project Scheduling). The input and output of the computer program are described, and some indication is given of the computational procedures. An outline of the present uses of RAMPS is given, together with an indication of future applications.

Litterer, Joseph A. "Program Management Organizing for Stability and Flexibility," Personnel, XL (September-October, 1963), pp. 25-34.

This article deals with the problems associated with rapid technological change and notes that while programs change, people do not. Project management is discussed in terms of resolving this personnel problem as well as other problems inherent in management of large contracts.

Lock, Dennis L. Complete Guide to Project Management. Boston, Mass.: Cahners Publishing Co., 1969.

This text describes the rationale and methodology of project management in general terms. Methods of charting, including bar charts and critical path analysis, are discussed. Material control is analyzed in depth and included as a portion of the discussion on charting. The analysis examines numerous facets of purchasing and storing materials used for projects.

Martino, R. L. Allocating and Scheduling Resources--Project Management and Control. Volume III. New York: Comet Press, Inc., 1965.

This volume contains an explanation of a technique for the allocation of resources: MAP ("Manpower Allocation Procedures," now known as "Multiple-Resource Allocation Procedure"). This procedure may be used on one project or on several projects at a time. The result of this allocation procedure is a scheduled starting time for each job, taking into consideration the sequence of performance, the resources required, and the resources avialable. It may be displayed on a time-oriented network to facilitate visual assimilation.

Moder, Joseph J. and Cecil R. Phillips. Project Management with CPM and PERT. Second edition. New York: Van Nostrand Reinhold Company, 1970.

The first five chapters of this book give a thorough foundation in the fundamentals of network based planning and scheduling. The remainder of the book examines more advanced concepts including GERT, the networking system directed at stochastic networks; a new approach to the three-time estimate problem and the use of computer simulation; practical tips on network applications. As a further aid to understanding the subject, the authors have included a variety of problems and exercises with solutions given to many of them.

Smith, Roy B., Roger Honebrink, and Joseph Purcell. "Program Management," Challenge, (Summer, 1969), pp. 4-5.

This article provides a concise summation of three managers' points of view on the subject of project management. The authors indicate the need for the technically skilled manager as well as manager who possesses the necessary administrative orientation.

Steiner, George A., and William G. Ryan. Industrial Project Management. New York: The MacMillan Co., 1968.

The author first discusses the nature of project management, indicating four typical characteristics of a project manager:

1. He is concerned with an identifiable end item or product.
2. His project involves participation of organizations and agencies outside his direct line control.
3. His project is relatively large in scope.
4. His projects involve risks due to the uncertainty connected with their completion.

Various organization charts which may be employed when project management is used are provided. These are discussed along with a project manager's job description. The scope of his authority and his need for leadership ability are indicated in the chapter dealing with management methods. The relationship between the project manager and the customer is discussed in detail.

Stewart, J. M. "Making Project Management Work," Business Horizons, VIII (Fall, 1965), pp. 54-68.

The author describes the organization of a project management system, gives criteria for implementing it, lists problems which can arise from it, outlines the executive action required, and details some of the personnel conflicts which can arise from managing the human element.

3. Introduction to Project Management: An Educational View

Bennigson, Lawrence, and John E. Nixon. "Educational Program Management: A Project Management System Application and Discussion." Paper presented to the Annual Seminar Symposium of the Project Management Institute, St. Louis, October, 1970.

The development and implementation of a project management system for a large and complex educational program, conducted in a municipal environment, is described in this paper. Background information explains features of the city involved and the nature of the educational program. The project management system is described. Emphasis is placed on discussion of application lessons learned and research questions generated by the experience. The authors call for a strategic rather than tactical approach to the design of management systems for projects.

Bittel, Lester R. *Management by Exception: Systematizing and Simplifying the Managerial Job*. New York: McGraw-Hill Book Company, 1964.
The author defines this system of management as a system of identification and communication that signals the manager when his attention is needed; conversely, it remains silent when his attention is not required. The book is devoted to the explanation and detailed description of this system.

Blanchard, Gary F., and Desmond L. Cook. "Project Management and Educational Change." Columbus, Ohio: Ohio State University, March, 1970.
This paper explains the need for project management in the field of education. It indicates that projects can be characterized by four major features:
1. There is some identifiable, observable end product which it is the purpose of the project to create.
2. They are complex.
3. They contain a certain degree of risk.
4. They have a limited time for completion.

Project management involving the planning and control of the three variables of time, cost, and performance are described and related to the field of educational change.

Brien, R. H. "Managerialization of Higher Education," *Educational Record*, LI (Summer, 1970), pp. 273-80.
Brien lists five major stresses on higher education today: growing college population, rising costs, rapidly changing demand for programs, student's quest for relevance, and an increasingly repressive public environment. To deal with these and other problems, he advocates an administrative model which incorporates a university-wide "management information system."

Cook, Desmond L. "Better Project Planning and Control Through the Use of System Analysis and Management Techniques." Paper presented at the Symposium on Operations Analysis of Education, Washington, D. C., November, 1967. (ED 019 729)
The concepts of project management, system analysis, and management technique are defined and integrated to produce the concept of systems analysis. Project plans can be formulated using the two methodologies of systems analysis: mathematical models or various forms of flow-graphs. The concept of network techniques (PERT/CPM) is introduced. A system for relating systems analysis, management, and project planning and controlling is included.

Cook, Desmond L. Educational Project Management. Columbus, Ohio: Charles E. Merrill Publishing Company, 1971.

This basic book is designed to give the educator an introduction to the concepts and applications of management science in educational research. The first part of the book deals with the general concept of project management and discusses general aspects of management. The second part outlines the general steps and processes involved in project planning and control. It presents detailed suggestions and concludes with the outline of a model project management system. The third part reviews how projects are selected within the organizational structure and the implications for organization in adopting project management systems.

Cook, Desmond L. "A Generalized Project Management System Model." Columbus, Ohio: Ohio State University, November, 1968.

This paper presents the outline of a generalized model for the management of educational projects. Two aspects of management are considered: planning and controlling. Planning includes scheduling and budgeting which form an information basis for controlling. The process of planning consists of performing five functions: project definition, work flow estimation, time estimation, resource allocation, and cost/budget estimation. Controlling includes providing management with information relating to progress and existing and anticipated problems, providing alternative solutions, and implementing the selected solution. Each step of planning and controlling is outlined in detail.

Cook, Desmond L. "An Overview of Management Science in Educational Research." Paper presented at a Symposium on Management Science in Educational Research, 15th Annual Meeting of the Institute of Management Sciences, Cleveland, September, 1968.

Cook emphasizes the decision-making function of management because of the present focus on the need for educators to explain their decisions and on the increase of accountability among the agencies which support education. He defines educational research as a broad study of all factors which affect education. He lists four trends regarding the applications of management science to educational research. He lists five problems which educational research and management science will have to deal with in the future.

Cook, Desmond L. "Some Economic Considerations in Educational Project Planning." Columbus, Ohio: Ohio State University, July, 1968.

This paper deals with the economic function of project planning. Three economic considerations are discussed: project selection, project termination, and long-term funding. These considerations must be integrated with the four variables of project planning: time, cost, performance, and reliability. Methods developed to make the decision process more efficient include operations research techniques, dynamic programming, and heuristic models.

Cook, Desmond L. "A Training Program in the Use of Management Information Systems in Educational Research and Development Activities." Washington, D. C.: United States Department of Health, Education, and Welfare, Office of Education, Bureau of Research, June, 1967.

This document provides a review of a training program designed to provide general training in management systems. A special emphasis was placed on the use of PERT so that the participants would become more efficient managers of research and development projects. The study includes a breakdown of the participants' backgrounds, of the major content areas of the program itself, the instruction schedule, and the instructors' and the participants' evaluation of the program.

Durstine, R. M. "Technical Trends in Educational Management: Opportunities and Hazards," *Comparative Education Review*, XIV (October, 1970), pp. 327-334.

The author describes the "state-of-the art" in technical methods, and gives some common criticisms of them. He then proposes a conceptual structure in which the tools are used indirectly rather than directly in solving educational problems. He bases this framework on seven key concepts: Operation, control, information, models, decision, allocation, and system.

Hanna, John R. "Project Management in an Educational Environment." Paper presented to the Annual Seminar Symposium of Project Management Institute, St. Louis, October, 1970.

This paper describes the activities of a school system in developing project management, some of the problems encountered, and behavioral changes observed. During its period of rapid growth, the school system took techniques from industry such as PERT, the control room concept, and finally, project management. Problems involved the training of staff, convincing people that planning is a legitimate adminstrative function, convincing administrators that they are not omniscient, and segmentation where network techniques are involved.

Hirsch, Werner Z. "Planning Education Today for Tommorrow," Urban Affairs Quarterly, II (September, 1966), pp. 3-18.

This paper discusses policy consideration, program formulation, and program administration of educational systems. The discussion covers the fields of benefit-cost analysis, use of the Delphi technique, and other managerial techniques.

Meals, Donald W. "Heuristic Models for Systems Planning," Phi Delta Kappan, XLVII (January, 1967), pp. 199-203.

The author points out that educators have not recognized the value of systems concepts in developing new policies and practices; he therefore encourages the collaboration of the educator with the systems analyst. He lists the essentials of the systems approach: it is a way of seeing the world, it concerns the relations among the various parts within a system and how these parts work together to accomplish the purpose for which the system exists. In educational terms, this includes every phase of the activity: the child, the curriculum, the media, the teacher, the management system, and all other resources. Tools, such as linear programming, PERT, and simulation enable the educator to compare alternatives more effectively, to establish system performance criteria, and to adapt new techniques. Finally, he suggests steps which educators can take to facilitate the use of systems planning: they can communicate through forums, conferences, conventions, and the like; they can use trained analyst-consultants; and they can train administrators and teachers in the use of the techniques of systems analysis.

Newman, K. S. "Administrative Tasks in Special Education: POSDCORB Theory," Exceptional Children, XXXVI (March, 1970), pp. 521-24.

A survey was conducted of the fundamental tasks of special education administration in 100 randomly selected public school districts with pupil populations between 13,000 and 30,000. An instrument was developed using Urwicks "POSDCORB" theory (planning, organizing, staffing, directing, coordinating, reporting and budgeting) to study seven types of administrative activities. Ranking of the tasks according to their importance was significant in four out of the seven areas. Training and teaching experience revealed significant relationships. It was found that administrators were not conducting research on exceptional children nor were they making periodic publications available to the parents or the public.

Nunn, Geoffrey E., and Lloyd L. Byars. "Quantitative Decision Tools and Management Development Programs," Journal of Health and Human Behavior, VII (Fall, 1966). (ED 014 637)

This article outlines the current status of quantitative methods and operations research (OR), sketched the strengths of training efforts and isolated weaknesses, and formulated workable criteria for evaluating success of operations research training programs. A survey of 105 companies revealed that PERT, inventory control theory and linear programming were effective in handling certain types of allocation and scheduling problems. Among the problem areas identified in operations research training were lack of interest and time on the part of management and non-availability of competent instructors. Improved management was seen to result from directing instruction toward concepts relating to logical problem formulation, problem analysis, and model building. The opportunity for application of operations research tools (dynamic programming, simulation and so on), was seen as important in training, and management games were suggested for this purpose.

Scott, Paul, and Robert Joyce. "Project Management for Urban Improvement." Paper presented to the Annual Seminar Symposium of Project Management Institute, St. Louis, October, 1970.

Although many applications of project management and its variations are industrially oriented, this paper describes the application of modified systems engineering management techniques to defining, phasing, and controlling community programs within a major city.

Steinberg, Harold I. "Scientific Techniques for Improving School Management Effectiveness," Management Services, VI (May-June, 1969), pp. 51-53.

This article indicates how management science principles can be applied to a functional problem in the field of education: bussing of students. A set of formulas is provided which may be used as a basis for projecting costs as a function of the number of students transported, number of assigned buses, number of assigned seats, area of school district, condition of road, terrain, etc.

Symposium on the Application of System Analysis and Management Techniques to Educational Planning in California. Burlingame, Calif.: Operation PEP, June 1967. (ED 023 181)

This is a collection of 21 reports presented at the two-day symposium which ended the eighteen-month planning phase for OPERATION PEP. The symposium served as a culminating activity in a training program for 100 California educators in the application of systems analysis and management planning techniques. The reports, funded under the Title III of ESEA, focus on the evaluation of management science as a fundamental mode of performance for educational planners in California.

Tettemer, John M. "The Evolution to Project Management in a Major Public Works Organization - The Los Angeles County Flood Control District." Paper presented to the Annual Seminar Symposium of the Project Management Institute, St. Louis, October, 1970.
This paper describes the evolution of a major public works organization to the voluntary use of project and program management. Included is a brief discussion of the facts-supporting systems which lay the groundwork for Project Management.

Wheatley, Edward. "Putting Management Technics to Work for Education," College and University Business, XLVIII (April, 1970), pp. 55-59.
The author reports the results of a study of significant recent developments in industrial management. He discusses management auditing, management education, planning and programming budget system, the management information system and the Stanford Application of a University information system, and simulation. He then presents twelve recommendations concerning these studies.

Williams, Gareth. "Innovation in Educational Management," OECD Observer, XXXIV (June, 1968), pp. 18-22.
This article discusses a management approach to the problem of scheduling facilities in terms of classrooms and other equipment and resources. The transport routing problem is discussed and a suggestion made that school buses be multi-functional in design so that they could be used to transport equipment, supplies, etc. during their idle hours. The problem of selecting students for admission to school is also discussed. Possible solutions using computer selection programs are indicated. The article concludes with a short discussion of program planning and budgeting.

4. The Project Manager

Cleland, David L. "Understanding Project Authority," Business Horizons, X (Spring, 1967), pp. 63-70.
Project management is the concept that has been developed to deal with situations where production and marketing strategies for new products do not fit a purely functional type of organization. This article examines the authority patterns of the project manager, a subject incompletely dealt with in contemporary literature. An understanding of these authority patterns can be utilized to prevent conflicts within an organization and to clarify lines of command so that each person involved in a program knows to whom and for what he is responsible.

Cook, Desmond L. "Management Training Program for Educational Research Leaders." Washington, D. C.: United States Department of Health, Education, and Welfare, Office of Education, Bureau of Research, March, 1969.

The document explains the content and procedures carried out under a grant from the United States government. To a degree, it is a continuation of the project described in "A Training Program in the Use of Management Information Systems in Educational Research and Development Activities." The project of "Management Training Program for Educational Research Leaders" differs from the other in substance, method, and target audience. The program was aimed at those who were in a position to influence training programs in colleges, universities, and the like. The scope of the project, the description of the program, and the evaluation of the program are all included in the paper.

Cook, Desmond L., Wilmer Kerns, and Sandra Damico. "An Investigation of the Responsibilities and Duties of Educational Project Managers." Columbus, Ohio: Educational Program Management Center, September, 1970.

This report identifies the duties, responsibilities, and authority associated with the position of a project manager in a local educational setting. The method of the study is explained in considerable detail and the results are analyzed. Responses from a convenience sample of educators engaged in project management or associated with project directors revealed similar acceptance and rejection of selected duties and responsibilities in both the should and actual conditions. Significant differences between should and actual duties and responsibilities centered upon administrative housekeeping activities actually carried out by project managers.

Dale, Leon A., and William Gakula. "Managers for a Changing Society," Personnel Administration, XXXIII (January-February, 1970), pp. 8-16.

This article examines the requirements for a manager in the twentieth century. The author indicates that today the effective manager must be able to anticipate and cope effectively with change. He continues by discussing those personal and behavioral traits which go into making a good manager.

Dillman, Duane H., and Desmond L. Cook. "Simulation in the Training of R & D Project Managers." Columbus, Ohio: Ohio State University, February, 1969.

This paper discusses the use of simulation materials for the training of project managers for education. The initial decisions regarding the use of simulation materials are delineated. An outline of a three day project management training program is provided and evaluated. Suggestions concerning the training program as obtained from the participants are tabulated and discussed.

Gaddes, Paul O. "The Project Manager," *Harvard Business Review*, XXXVII (May-June, 1959), pp. 89-97.
The selection of a project manager is a crucial step in the implementation of a project management system. This article not only describes the type of man which such a position requires, but it also considers the functions of a project manager from the viewpoint of duties and the necessary training for his success in the project. The unique characteristics of a project management organization are discussed indicating the level of authority and responsibility which should be given to a project manager. The need for developing the ability to communicate by the project manager is stressed.

Keats, E. S. "How to Become a Good Project Manager," *Aerospace Management*, VI (August, 1963), pp. 20-23.
This article examines the role of the project manager in terms of his interrelationships with customers, superiors, and subordinates. It emphasizes personal actions which must be taken by a project manager in order to assure cooperation, understanding and good (accurate) communications among his staff and others working on the project. A checklist for project manager's self-appraisal is provided.

Mahoney, T. A. "Predictors of Managerial Effectiveness," *Building the Executive Team*. Englewood Cliffs, N. J.: Prentice-Hall, 1961.
This chapter examines the various physical characteristics, abilities and skills, interests and personality traits which go into making a good manager. The author discusses in detail those particular facets of each area, indicating which are most important and the sources of the studies which so indicate.

Miller, Donald R., *et al*. *A Manager's Guide to Objectives*. San Mateo County, Calif.: Operation PEP: A State-wide Project to Prepare Educational Planners for California, 1969.
In the implementing of a project management system, the establishment of goals and objectives is critical. This document has four stated objectives: (1) to help educators learn to manage objective-setting processes; (2) to guide them in deriving relevant information and in constructing verifiable statements of objectives; (3) to teach them how to appraise performance objectives; (4) to teach them to use objectives as communication referents and as guides for action.

Sauerwine, Andrew H. "Prerequisites for Management Development Programs," Journal of the College and University Personnel Association, XXI (February, 1970), pp. 1-6.

Management development occurs when there are changes in the behavior of managers. Desired outcomes of management development programs include competence in setting long-range goals and identifying specific objectives, congruence between personal and organizational goals, and competence in evaluating organizational performance. A major task of management is the development of a climate in which both employee and organizational needs can be accommodated. Essential to the realization of these objectives is effective communication.

Tilles, Seymour. "The Manager's Job: A Systems Approach," Harvard Business Review, XXXXI (January-February, 1963), pp. 73-81.

The author feels that the older concepts of management are outmoded and that the impact of fields such as cybernetics, systems engineering, social psychology, and the like requires that the manager re-think his position. The systems approach to management can help the manager in three ways: (1) it can allow him to take advantage of the new knowledge which is constantly appearing; (2) it gives him a framework that lets him relate one specialty with another; and (3) he can see how his company relates to its environment and the other systems of which it is a part.

5. Management Control

Cook, Desmond L. "Management Control Theory as the Context for Educational Evaluation." Pre-publication draft of a paper which appeared in the Journal of Research and Development in Education, III (Summer, 1970), pp. 13-26.

Cook contends that, given the current emphasis in evaluation which focuses on the provision of information of educational decision making, new evaluation models and/or theories are not required: the management control theory can serve as an effective context for educational evaluation. A great deal of research and development effort has been focused on providing management with the information it needs to plan and control its activities (i.e. to make them operate in a more desirable way).

Ianni, Frances. "Power, Participation, Accountability, Establishing a Responsive Educational System," APSS Know-How, XXI (January, 1970), pp. 3-4.

This paper discusses the question, "How does one establish an adequate education system which allows for the legitimate demands of the community, the students, the teachers, the administrators, and the political system?" The main emphasis of the paper is on the managerial control function, i.e., who should control the various aspects of an educational system.

6. Research and Development Project Management

Baker, N. R., and W. H. Pound. "R and D Project Selection: Where We Stand," IEEE Transactions on Engineering Management, XI (December, 1964), pp. 124-134.

This article examines ten methods for evaluating projects prior to undertaking them. The ten methods fall into three general categories: decision theory approach, discounted net value or present value, and dynamic programming. The different characteristics of each method are tabulated for easy comparison. The authors indicate that none of the methods are used wisely, primarily because they have not been thoroughly tested using real data; an extended bibliography is provided for continued study.

Camp, William E. "Executive Direction of Projects," Handbook of Industrial Research Management, Carl Heyel (ed.). New York: Reinhold Publishing Corporation, 1959.

This article deals with management of basic research projects. The author discusses planning and notes that this phase of management is impeded when working in basic research for four reasons:

1. The objective is not definite.
2. Without a definite objective, a time schedule is difficult to produce.
3. Discoveries made along the way may result in changes in direction.
4. Researchers require some degree of freedom in their work.

On the other hand, planning during the applied research and development phases of a project can be done much more precisely. Project planning is discussed in a step-by-step manner. The use of charts is indicated as a management tool to provide added visibility and communications in planning and control. Charting is discussed as a part of the overall scheduling program. Methods of progress-reporting are delineated in the final section.

Cleland, David I. "Key Problems for Project Management System Developers." Paper presented to The Annual Seminar Symposium, Project Management Institute, St. Louis, October, 1970.

This paper examines the conceptual framework of project management, particularly in terms of the project-functional interface. The need for delineation of specific interfaces among the organizational subsystems is highlighted. The opportunity for extension of project management type organization systems to educational, ecclesiastical and urban systems is examined.

Cook, Desmond L. "A Needed Reorientation of Educational Research for Educational Planning." Columbus, Ohio: Ohio State University, January, 1968.

The basic management functions (planning, organizing, directing, and controlling) are discussed in relation to performing research projects. To increase the usefulness of research in educational planning, it needs to be more broadly conceived, more systematic in its conduct, and different in orientation than it is at the present time. Methods of improvement in each of these areas are discussed.

Cook, Desmond L. "A New Approach to the Planning and Management of Educational Research." Columbus, Ohio: Ohio State University, 1964.

This paper presents an introduction to the concepts of project management. Terms are defined and discussed at an elementary level with attention directed to the use of project management in research projects. Three characteristics are noted: a schedule must be maintained, a complex group of interrelated activties exists, and a great deal of uncertainty regarding the nature of the tasks to be performed exists. The chief components of a network analysis are delineated. A list of specific questions (with answers) which must be answered in the preparation of proposals and in the conduct of research is included. The article concludes with a listing of the advantages of network analysis: the interdependency and sequence of tasks if visually portrayed, personnel requirements can be projected with greater accuracy, potential trouble spots can be isolated quickly, the relative significance of problems can be ascertained so that the project director can allocate his energies most efficiently.

Cook, Desmond L. "The Use of Systems Analysis and Management Techniques in Program Planning and Evaluation." Columbus, Ohio: Ohio State University, June, 1967. (ED 019 752)

This article presents an introduction to management systems. Management systems are defined as a set of operating procedures which personnel carry out to acquire

needed information from appropriate sources, process the data in accordance with a preprogrammed rationale, and present them to decision makers in a timely, meaningful form. Network-based management systems are also discussed and illustrated.

Findley, Warren G. "Problems and Pitfalls in the Operations of Research and Development Programs." Paper presented to the Management Training Program for Educational Research Leaders, University of Georgia, Athens, June, 1968.

Findley lists several "do's" and "don't's" with regard to attempting to carry out a research and development project:

1. Do not operate as a local small contracts program.
2. Do not avoid interaction between field experimentation and evaluation.
3. Do not organize by departments of basic research, applied research, dissemination, and the like.
4. Do not appoint senior members as heads of units and expect others to line up under them.
5. Do have enough supervisory personnel so that graduate students are not monitored by other graduate students.
6. Have definite and clearly stated objectives.
7. Have a sense of urgency and commitment to the task at hand.

Goehl, Jo. "Some Issues in the Management of Research Personnel." Columbus, Ohio: Ohio State University, Educational Program Management Center, December, 1969.

This "state-of-the-art" review explores some of the writings on the topic of management of research personnel to see what the present problems appear to be. The author lists problems facing the research person and cites pertinent literature which suggests solutions to these problems. A summary of the findings concludes the study.

Hemphill, John K. "Management and Operation of Educational Laboratories," Journal of Research and Development in Education, III (Winter, 1970), pp. 65-80.

Project and program management are defined and differentiated. The basic difference between program management on the one hand and project management on the other is the commitment that is made at the outset to the attainment of objectives in the case of a program and to the execution of a set of planned activities in the case of a project. The success of program management is measured in terms of attainment of predetermined objectives, whereas the success of project management is measured in terms of how efficiently the project is managed. An outline of a "Basic Program Plan" prepared by the Appalachia Educational Laboratory, Inc., is included and discussed.

Kearns, John H., William F. Swartz, and Thomas A. Snyder. "Project Management in the R & D Environment: A Man/Machine Interface Problem." Paper presented to the Second Annual Seminar Symposium on Project Management, St. Louis, October, 1970.

This paper has been constructed to provide both the conceptual and operational considerations pertaining to project management in the Research and Development environment from the viewpoint of the people involved at the working level. Methodology developed in the area of cockpit engineering was cross-applied to studying the management problem confronting project scientists and engineers today. A real time simulation approach developed for attacking cockpit design problems was applied to obtain understanding of the management problem. This was necessary as a prerequisite to specifying the requirements for a fully integrated and responsive system at the project level. The approach resulted in the problem being conceptualized as a man-machine interface problem in which the system is comprised of people and resources that must be controlled by the manager. Four modules, technical scheduling, man power financial and documentation storage and retrieval were developed as tools for studying the problem in its environment. Results indicate that in Research and Development, a responsive system must be built at the most detailed level and then information summarized upward. Attempts to implement the system from upper management will only result in partial and fragmented solutions.

Roman, Daniel D. Research and Development Management: The Economics and Administration of Technology. New York: Appelton-Century Crofts, 1968.

The author commences the chapter on Project management by discussing the four phases in the life cycle of a project:

1. Conceptual phase.
2. Formative phase.
3. Operational phase.
4. Terminal phase.

The position and qualifications of the project manager are next discussed. Problems of resource allocation among various projects are indicated.

Taft, Martin I. "Recent and Potential Application of Engineering Tools to Educational Research." Paper presented at the First Pre-session of the Wisconsin Educational Research Association, Manitowoc, December, 1967.

This paper presents a summary of some recent engineering research in education and identifies some research areas with high payoff potential. The underlying assumption is that a school is a system with a set of subsystems which is potentially susceptible to analysis, design, and eventually some sort of optimization. This assumption leads to the increased application of engineering techniques which relate inputs and outputs, computer programming, simulation vehicles, control and decision theory, and many other tools to the solution of administrative and teaching problems in education. Some areas dealt with are school management, resource allocation problems, decision rules, curriculum content allocation, and curriculum content transmission.

7. Project Management: A Systems Approach

Banghart, Frank W. Educational Systems Analysis. London: Collier-MacMillan Limited, 1969.

This introductory text on systems analysis covers a broad spectrum of topics. It is intended rather to introduce the reader to the subject material than to present methods for solution to actual problems. The title is somewhat misleading, as the book does not concentrate on educational systems and, in fact, contains only several examples dealing with education. The book is written in a simple style. Only a slight acquaintance with mathematics is required, and all examples are worked out in great detail. Two sections of the book are especially valuable to the educator. They are chapters 6 and 7. The former deals with methods of planning and controlling including a varied group of systems methods as well as network methods. The latter deals with systems cost analysis and includes information on utility analysis, programmed budgeting, and benefit-cost analysis.

Boice, John. "A Systems Approach to School Construction." Speech given at the National Vocational-Technical Facility Planning Conference, (n.p.), June, 1967. (ED 025 113)

Systems approach as used in this paper refers to the process of a building coming into being. The systems approach attempts to relate the processes of factory production and school construction in that the problems of the spacing and fitting of construction components are considered at the beginning of the design stage of construction. For the systems approach to insure minimum cost, high quality and flexibility, it must be based on production volume, reasonable notice time to industry for tailor made components, and clearly defined functional goals.

Cook, Desmond L. "The Impact of Systems Analysis on Education." Columbus, Ohio: Ohio State University, April, 1968.

This article introduces the basic concepts of systems analysis and discusses instructional systems, project management systems, management information systems, planning-programming-budgeting systems, and operations research.

Halpert, Harold P. Models for the Application of Systems Analysis to the Delivery of Mental Health Services. New York: The American Orthopsychiatric Association, 1968. (ED 020 539)

Systems analysis can be applied to the planning and delivery of mental health services. The models presented show how a systems approach can be used to answer some of the key questions in planning, organizing, and evaluating mental health service programs. Model 1 approaches the task of defining and categorizing mental health and related problems. Problems are grouped as being politically defined, socially or culturally defined, and individually defined. Model 2 assesses resources. It permits types of personnel and institutions that are available to provide services to be cross-referenced to types of intervention and/or services. An example of an information system that may be used to develop data on need for services in terms of "user requirements," model 3 is a diagrammatic representation of the flow of information in a county-wide data bank on current users of services. A series of charts constitute model 4, which illustrates a method for determining the critical pathway of an individual through the care-giving system. The linkage among agencies and the channels along which people are processed is shown in model 5. The final model demonstrates how the elements in a multi-service facility are linked with one another in terms of people who come for help.

Hartley, Harry J. "Twelve Hurdles to Clear before You Take on Systems Analysis," Journal of Systems Management, XX (June, 1969), pp. 28-29.

This article briefly outlines twelve areas where systems analysis may not meet expectations and indicates some pitfalls which the school administrator should avoid.

Pfeiffer, John. A New Look at Education: Systems Analysis in Our Schools and Colleges. New York: The Odyssey Press, 1968.

This brief book provides a short but relatively complete overall view of a systems approach to managing education. Little emphasis is given to program budgeting. More emphasis is placed on systems analysis. Of special interest are chapters 2, 5, 6, and 7. Chapter 6 deals with university research and the last chapter touches briefly on the Delphi-method.

8. Problems in Project Management

Avots, Ivars. "Why Does Project Management Fail?" California Management Review, XII (Fall, 1969), pp. 77-82.

This article examines the problems which result in failure of project management systems and provides a ten step guideline to avoid future failures. The ten steps are as follows:

1. When starting off in project management, plan to go all the way.
2. Do not skimp on the project manager's qualifications.
3. Do not spare time and effort in laying out the project groundwork and defining work.
4. Insure that work packages in the project are of the proper size.
5. Establish and use network planning techniques, having the network as a focal point of project implementation.
6. Be sure that the information flow related to the project management system is realistic.
7. Be prepared to continually replan jobs to accomodate **frequent** changes on dynamic projects.
8. When possible, tie together responsibility, performance, and reward.
9. Long before a project ends, provide some means for accommodating employees' personal goals.
10. If mistakes in project implementation have been made, make a fresh start.

Mooney, Loss L. "A Reflection from Experience in a Project," Theory into Practice, V (June, 1966), pp. 139-143.

This paper indicates some of the problems which can arise when a research project is introduced into a school system. The problems fall into two categories: staffing and managing the operation and dealing with outside publics. The author has provided a comprehensive guide to overcoming these problems and to ensure the success of a project.

9. A Project Management Tool: Network Analysis

Archibald, Russell D., and Richard L. Villoria. Network-Based Management Systems (PERT/CPM). New York: John Wiley and Sons, Inc., 1968.

This book, although industrially oriented, is of interest to the educator who wishes to learn about network-based management systems and their applications in greater detail; it is divided into five parts. The authors describe the model of this type of system, those factors which must be dealt with in adapting a model system to a specific case, a series of case studies, a detailed examination of potential problems, and an extensive series of appendices.

Arnold, Mary F., et al. Health Program Implementation Through PERT: Administrative and Educational Uses. San Francisco, Calif.: American Public Health Association, 1966. (ED 012 431)

The main advantage of the Program Evaluation and Review Technique (PERT) is the provision of a graphic model of activities with estimates of the time, resources, personnel, and facilities necessary to accomplish a sequence of interdependent activities, as in program implementation. A PERT model can also improve communication between persons and departments by showing the precise role of each unit in the process, and can help reduce friction in problem-solving and administrative decision making by revealing the necessary steps. The steps in developing the network itself are specifying the final event or completion point, deciding on precedent events that must be attained, sequencing these events properly, and determining activity time between events. PERT has been successfully used in planning a program of dental continuing education, developing a teacher's handbook, and conducting various public health projects. However, PERT does not promote creativity or originality, and must follow the stages of problem identification, fact finding, determination of long-range and short-range goals and of criteria, and evaluation of possible solutions. The document includes a problem-solving flow chart, PERT network flow diagrams, and 21 references.

Babigan, G. R. "The Use of the Critical Path Method in Building Schools," The American School Board Journal, CLI (August, 1965), pp. 26-27.

This article, intended to introduce the educator to the very basic fundamentals of CPM in school building construction, discusses the principles of the method without the "detailed nuts and bolts" involved in operating the system.

Case, C. Marston. "Application of PERT to Large-Scale Educational Research and Evaluation Studies," Educational Technology, IX (October, 1969), pp. 78-83.

Today educational research projects often involve many people over a long period of time. Such projects call for considerably more coordination than the one-or-two person projects which have been successfully conducted in the past with little in the way of special coordination efforts. In this article, four points are covered related to the coordination and management of such large scale studies. First, the need for 'project visibility,' is discussed. Second, some basic features of a PERT chart (PERT is an acronym for Project Evaluation and Review Technique) are noted. Third, a very simple application as a basis for making recommendations about implementing PERT is used. Finally, an application of PERT to a large scale project at the Educational Testing Service is described.

Cochran, Leslie H. "PERT: A Technique in Educational Research," The Journal of Educational Research, LXIII (September, 1969), pp. 19-25.

The purpose of this report is to review the educational significance of the Program Evaluation and Review Technique. As a research tool it is designed to evaluate progress, focus attention on problems, determine completion dates, and predict the likelihood of reaching stated objectives. By tracing the historical development and use of PERT in other fields, a basic foundation was established for its use in education. Typical networks for experimental research, survey research, historical research, and curriculum projects were provided. In summarizing the advantages of using PERT it was pointed out that it provided a realistic plan of attack, focused attention on problem areas, assisted in the utilization of all resources, and provided meaningful project status reports.

Cook, Desmond. "Applications of PERT to Education." Paper presented at the PERT Workshop, Ohio State University, Columbus, October, 1964.

After giving a brief introduction of the historical development and industrial applications of PERT, Cook comments on those factors which cause educators to turn to PERT to improve their research and development efforts. He asks three questions which may be applied to any given project; when they are answered in the affirmative, then PERT may be successfully applied to the project. Examples of projects to which PERT has been or may be successfully applied are also given.

Cook, Desmond L. "PERT Applications in Educational Planning." Columbus, Ohio: Ohio State University, May 1966. (ED 019 751)

The topic of this paper is the potential value of PERT to educational planners. It seeks to answer the question "Can or should PERT be applied to educational planning situations?" Educational planning is discussed and followed by a description of the nature of PERT. Advantages of using PERT are enumerated. This paper deals with the benefits obtained by using PERT, but does not include the methodology of network analysis, time calculations, etc. which are required in order to construct a PERT program. Thus, it deals with the philosophy for using PERT, rather than how to use it.

Cook, Desmond L. The PERT Lectures: A Case Study in Knowledge Dissemination and Utilization. Volume III. Columbus, Ohio School of Education, Ohio State University, August, 1966.

This short book contains a follow-up study indicating the results of a series of lectures given at twelve universities on PERT applications. The main goal of the study was to ascertain the amount of utilization, if any, of PERT techniques by those in attendance at the lectures. The characteristics of the group participating in the lectures are discussed at length. The results of the study indicate that about 20% of those participants who had no previous contact with PERT actually used it on a project after the lecture series, while about 42% of those having previous experience used it after the lecture series. The various reasons for use and non-use are discussed and tabulated.

Cook, Desmond L. "Program Evaluation and Review Technique: Applications in Education." Cooperative Monograph No. 17. Washington, D. C.: United States Government Printing Office, 1966.

This monograph, written specifically for educators, is designed to disseminate the basic concepts and principles of that project management information system known as Program Evaluation and Review Technique (PERT) and offers suggestions for utilizing these concepts in the management of various types of educational research and development problems. The work is divided into four major sections: the management process in educational research and development, basic characteristics of PERT, practical applications of PERT to the different kinds of research and development problems, and the implementation of PERT on these projects.

Coon, Lewis H. "Applying PERT to a Variable Manipulating Project." Paper presented at a symposium on "The Applicability of Program Evaluation and Review Technique (PERT) to Educational Research and Development Projects," Chicago, February, 1964.

The purpose of this paper is to show how PERT was utilized to assist in the location of many unexpected problems which arose during the evolution of an educational experiment, The Hawthorne Effect Project. The study concludes that, although some basic definitions may require changes, PERT was valuable in the management process phase of the project.

Crowe, Robert. "PERT Chart for Employing Teachers," School and Community, LVII (April, 1971), p. 31.

The author, the Director of Personnel of the Parkway School District, St. Louis County, gives the PERT network which his district utilized to screen the 2100 applicants during the recruiting period, 1970-1971. The chart was developed because it gives a clear explanation of a rather complex process, it helps new administrators to understand the system, it refreshes the memories of older administrators, and it enables administrators to review problems and "bottlenecks in the system."

Dippel, Frederick H. "PERT Puts Supplies and Teachers Where They Fit," Nation's Schools, LXXVIII (September, 1966), pp. 75-78.

The article describes the implementation of PERT to insure that staff, supplies, and services would be ready when the new middle school opened. The implementation is unique, because the school district involved did not use a computer.

Garlock, Jerry C. "PERT: A Technique for Education," Educational Leadership, XXV (January, 1968), pp. 345-353.

The author presents a simplified description of a PERT system and lists some of its potential benefits. This article, although not explicit enough to allow the reader to use PERT on the basis of it alone, does give some background material and easy-to-understand concepts of PERT.

Handy, H. W., and K. M. Hussain. Network Analysis for Education Management, Englewood Cliffs, N. J.: Prentice-Hall, Inc., 1969.

In this book, the authors attempt to apply network analysis to project management in the educational environment. CPM and PERT, the two most prominent network analysis techniques, are treated comprehensively in this volume. It includes a description of the logic and techniques of network analysis as well as its applicability to educational projects.

"How Athens Bounced Back from a School Building Fire," School Management, XI (August, 1967), pp. 32-25.

The article describes the use of SCSD (School Construction Systems Development) and CPM to replace an elementary school, which was totally demolished by fire, with two new buildings. The total building time needed was seven months.

Justus, J. E. "PERT," School Management, XI (December, 1967), pp. 24-29.

The author of this introductory article asks and provides answers to three basic questions which are often asked about this basic management technique: What is it? When do you use it? and How does it work?

Kaimann, R. A. "Educators and PERT," Journal of Educational Data Processing, (Spring, 1966), pp. 43-57.

This article discusses the applicability of PERT to education. The author accomplishes this by presenting the following: (a) a historical introduction to the fundamentals of PERT; (b) a treatment of the underlying concepts of PERT; (c) an example of how PERT was applied to a segment of an educational research problem; and (d) an evaluation of the usefulness of PERT.

Kaimann, Richard A., and Robert W. Marker (eds.). Educational Data Processing - New Dimensions and Prospects. Boston, Mass.: Houghton-Mifflin Co., 1967. (ED 018 983)

Written for administrators and planners this anthology is concerned with information principles, effects, designs, and integration of systems. Concentrating on the constraints on automation and its impact on education, this document considers new uses for computers in reporting statistics, school census, attendance counting, grading, scheduling, and pupil transportation. Discussed are uses of computers in guidance research, population projects, enrollment predictions, construction scheduling and the analysis of grades and class size. Other articles consider when and to what extent school districts should mechanize and the costs and procedures involved. A final section is concerned with future prospects for increased centralized planning and more processing devices, reduced clerical burdens, improved organizational operation and control, expanded use of programmed instruction, increased use of computers in research, and district wide processing systems.

Kapfer, P. G. "Instructional Management Strategy for Individualized Learning," Phi Delta Kappan, XLIX (January, 1968), pp. 260-263.

This article is concerned with the utilization of a strategy to expedite the management of an instructional strategy to achieve individualized instruction. This strategy is based on, but does not adhere strictly to, the principles of the PERT network. The strategy is presented as a network diagram designed to show a sequence in which a pupil will attain an adequate background so that he is able to perceive problems and ask questions.

Koltz, Richard C., and John O'Dell. "Flow Chart Approach to Curriculum Study," The Clearing House, XLV (October, 1970), pp. 72-75.

Having encountered difficulties in the value of curriculum development in the high school, the authors present a curriculum flow chart which gives a systematic and structured approach to study and development. It is an organizational design for curriculum study which seeks to involve all staff levels in curriculum study, while serving as a vehicle for obtaining the necessary facts to be weighed in the decision-making process.

Maier, Robert H. "A Quantitative Technique for Academic Administrators," Educational Record, LI (Fall, 1970), pp. 400-404.

This article describes the characteristics of a PERT network and delineates in simple terms the utilization of such a network in a typical educational situation.

Ripley, Kathryn Jane. "PERT as a Management Tool for Educators." Columbus, Ohio: Ohio State University, Educational Program Management Center, April 1968. (ED 023 368)

The author describes the use of PERT as a management planning tool in the establishment of Northern Virginia Community College, a two-year technical school. She concludes that PERT techniques greatly expedited the work involved with such a project and that they met successfully all the demands placed upon them.

Sagan, Edgar. "An Analysis of the Processes of Developing a Consortium." Paper presented to the Academic Consortia Seminar, Washington, D. C., October 1969. (ED 033 654)

This paper reports the efforts of the author in establishing guidelines for the formation of consortia. He first uses systems analysis to determine the objectives of five consortia and to analyze the components which enable them to achieve these objectives. A time sequence was established in a precedence diagram which later became a PERT network describing the sequence of events to be followed in forming a consortium.

Stufflebeam, Daniel L. "An Application of PERT to Test Development." Columbus, Ohio: Ohio State University, February, 1964.

The purpose of this paper is to consider the PERT technique as a possible management aid for planning and directing test development projects. An example is provided indicating how PERT might be applied to a research project. This paper assumes the reader understands the PERT techniques, network makeup, calculations, etc.

Tanner, C. Kenneth. "Techniques and Application of Educational Systems Analysis: PERT, Linear Programming and Utility/Cost Sensitivity Analysis," Audiovisual Instruction, XIV (March, 1969), pp. 89-90.

The author identifies three techniques of systems analysis, PERT, linear programming, and utility/cost sensitivity analysis, and tells briefly how they may be utilized in allocating resources in education.

Thier, Herbert D. "PERT and the Administration of Curriculum Innovation." Berkeley, Calif.: Science Curriculum Improvement Study, University of California, (n.d.).

This document provides a discussion of the possible role PERT can play in planning the development of a new curriculum in science for grades K-6.

Woodgate, H. S. Planning By Network. London: Business Publications Limited, 1967.

This book provides a very detailed treatment of network construction, including multi-level and sectionalized networks. Analysis of networks and establishing time estimates is also considered in depth. Cost planning and control are integrated into the network management system.

Yee, S. H., Jay Shores, and Karen Skuldt. "Systematic Flow Charting of Educational Objectives and Processes," A. V. Communication Review, (Spring, 1970), pp. 72-83.

The authors conclude that systems approaches denote the need to develop designs for educational institutions which specify with minimum uncertainty what the objectives are and interrelate all facets of the system to achieve the objectives. Flow charting objectives-operations would facilitate the preplanning and management of educational systems and reduce the possibilities of uncertainty and error due to sole reliance on verbal descriptions. More effective use of audio-visual facilities and instructional resources could be developed if such processes were systematically programmed into instructional procedures. Greater systematic programming and coordination of the system's macro- and micro-concerns and developments are essential to providing more effective programs today and in the future.

Zanchetten, A. "There Are New Uses for New Tools in School Planning," Nation's Schools, LXXVIII (September, 1966) pp. 74-75.

The author describes the way in which his school system utilized CPM in the construction of a new building.

II. EDUCATIONAL PROBLEM SOLVING

1. Administration and Decision Making

Bolan, Richard S. "Community Decision Behavior: The Culture of Planning," AIP Journal, XXXV (September, 1969), pp. 301-309.

This paper presents a conceptual framework for better understanding the relationships between the planning process and community decision-making. From an initial assumption concerning the nature of the decision-making process, the paper suggests four sets of independent variables that influence decision outcomes: (1) process roles (including the dimensions of specialization and skills); (2) the decision field (including the environment for decision not only in the community but within the deciding body itself; (3) planning and action strategies; and (4) issue attributes. Using this framework, a series of hypotheses are posed for future research, and the potential implications for urban planning are discussed. The concepts developed are behavioral, based upon what actually does occur in urban government planning as it interacts with decision-making, not upon what should occur. This conceptual framework, while admitedly preliminary, containing many variables requiring more precise definitions, should provide a valuable framework for further research. The implications and conclusions of the conceptual framework should be valuable, considering the obvious similarities between urban and educational administration.

Burns, Richard W., and Gary D. Brooks. "Processes, Problem Solving, and Curriculum Reform," Educational Technology, XI (May, 1970), pp. 10-13.

"Processes" are carefully defined by this article as complex skills which learners use in transforming knowledges and understandings in order to effect solutions to problems. They are mental skills, which when combined in proper sequences, form "strategies" requisite for solving problems in educational and all other real-life situations. Present day education places too much emphasis on the learner's memorization of information. Problem solving skills are neglected. Curriculum reform efforts need to consider the inclusion of materials and activities associated with processes

Drucker, Peter F. "What We Can Learn From Japanese Management," Harvard Business Review, XLIX (March-April, 1971), pp. 110-122.

Drucker suggests that certain features of Japan's paternal industrial system may prove useful to U. S. industry. The Japanese System of "consensus" decision making is recommended for, though relatively slow, it seems to arrive more surely at essential problems by emphasizing the defining of the question. Also, radical change rather than patchwork adjustments seem easier to make, and decisions thus arrived at "sell themselves" to all concerned, facilitating implementation. The job security policies also are cited for harmonizing employment security with other needs such as productivity, flexibility in labor costs, and acceptance of change.

Gooler, Dennis D. "Data Collection for Educational Decision-Making: Establishing Priorities." Urbana, Ill.: Center for Instructional Research and Curriculum Evaluation, Illinois University, 1970. (ED 046 998)

This is a presentation of a method applicable to complex administrative decisions, enabling decision makers to establish priorities for the collection of data to be used as input to the decision-making process. The concept of "priority task unit" is introduced, and divided into five elements: (1) identification of prime interest group; (2) identification of key questions; (3) identification of necessary data; (4) identification of potential sources of data; and (5) identification of possible methods of obtaining data.

Kaufman, Felix. "Decision Making -- Eastern and Western Style," Business Horizons, XIII (December, 1970), pp. 81-86.

Kaufman compares the Western management approach of direct, unilateral "battlefield leadership," which stresses individual responsibility, with decision making in Japanese commercial and industrial dealings. Western methods, most applicable when secrecy and immediacy are vital, seem to cause hesitancy and discomfort as situations change rapidly. Hara gei, the Japanese method of consultative, shared responsibility is slower and more public, but apparently insures that fewer alternative decisions are overlooked, and the trauma which usually accompanies change is reduced. The author suggests a synthesis of the two, using professional strategic analysts.

Keislar, Evan R. "Teaching Children to Solve Problems: A Research Goal," Journal of Educational Research, III (Fall, 1969), pp. 3-14.

This article presents a broadly based consideration of problem solving in relation to the school curriculum, offering directions for the development of tests of problem solving which will serve to define such a goal for educational research. The author distinguishes between "performance" situations, where routine formulas yield answers in narrow instances, and true problem solving skills which can be applied (generalized) to a whole broad class of problem situations. Using frequent reference to research in this area, the author discusses thirteen ways in which problem solving events may be described; the relative merits of "open-ended" versus "goal-directed" tests; problem-solving strategies to teach to students; and problem solving goals in terms of personality. This broad discussion is valuable in providing an overview of research in this area, and includes a bibliography with thirty-one entries.

Miller, Richard I. "Selecting New Aids to Teaching." Washington, D. C.: Association for Supervision and Curriculum Development, 1971. (ED 049 167)

School officials now must choose instructional packages concerning complex subjects from many sources, and involving large outlays. Therefore, this document presents specific and realistic guides following this sequence: (1) initial probing of the proposed unit to decide if it is really needed and what it will accomplish; (2) developing

a plan of action; (3) accomplishing the plan by identifying the objectives of the unit; (4) reaching a final decision; and (5) problems which may interfere with the implementation of the decision.

Stanger, Ross. "Corporate Decision Making: An Empirical Study," Journal of Applied Psychology, LIII (February, 1969), pp. 1-13.
A questionnaire regarding corporate decision-making (dm) tactics was sent to 500 vice-presidents of 125 large firms. Reply rate was 50%. Data indicates that many goals other than profit maximization are considered in decisions, and that estimates of marginal costs and profits are not always carefully made. Profitability and executive satisfaction with decision-making practices are positively correlated. Factor analysis shows at least three important dimensions of the dm process: managerial cohesiveness, formal procedures in dm, and centralization-decentralization. Factor scores derived from these factors were significantly different for firms in top and bottom thirds on profitability. However, these scores failed to predict increases or decreases in profitability over a seven year time span. Interpretation favors the view of the corporation as a coalition, with social role and personal bias of the executive affecting his decisions. Participative practices are supported as both satisfying and profitable.

Svenning, Lynne L. "Collective Decision Making in Organizations." Burlingame, Calif.: Operation PEP, 1970. (ED 046 118)
This report attempts to relate decision and small group process theory to practical decision situations for educational managers. Discussion includes: (1) the implications of increasing social and technological change for organization; (2) an analysis of the decision process, highlighting the value of collective decision making; (3) some suggestions for improving organizational decision making in education; (4) the roles of rationality and creativity; (5) guidelines for managing and functioning, and (6) an appendix listing behavioral propositions drawn from small group research concerning group process.

Van De Ven, Andrew, and Andre L. Delbecq.. "Nominal Versus Interacting Group Processes for Committee Decision-Making Effectiveness," Academy of Management Journal, XIV (June, 1971), pp. 203-212.
This article reviews literature dealing with the relative effectiveness of interacting (spontaneous group discussion) as opposed to nominal (individual silent effort in a group setting) group processes for problem-solving committees. The authors claim that the optimal combination of group processes for a problem-solving committee is: (1) the use of nominal group processes for fact-finding, idea generation, or initial subjective probability

estimation in the first phase of a committee's work; (2) the use of structured feedback and interacting discussion in the second phase; and (3) nominal group voting for final independent individual judgments in the final phase. The relative advantages and disadvantages of each method are discussed in some detail.

2. Administrative Tools, Techniques and Skills

Bish, John (ed.). Information Requirements for Planning Instructional Strategies: An Anthology for Teachers and Principals. Alexandria, Va.: Central Atlantic Regional Educational Laboratory, Inc., 1969. (ED 032 292)

This study anthologizes reports designed to develop a systematic procedure for collecting information from actual school settings about the impact of school organization, staffing, and administration on students, in order to develop an information base for decision makers.

Brooks, J. E. "Operational Research in Education Administration," Education and Urban Society, III (November, 1970), pp. 7-40.

This article attempts to outline some of the work that has been done in Britain in the area of "Operational Research" from 1965 to 1970, and to discuss its impact on education management. Operational Research aims at improving the administrative processes of education. Complex administrative problems are solved through the meticulous construction of models which represent the essential variables in question. Three detailed case studies are described: forecasting school populations, accomodation, and controlling building programs. These represent, respectively, the three areas of administration to which Operational Research may be profitably applied: providing management with more precise and complete information upon which to base decisions; providing management with a means of evaluating the consequences of alternative decisions and policies prior to commitment in practice; helping management plan and control ongoing processes. Specific approaches and formulas for the resolution of each of the case study problems are provided.

Buhl, Harold R. Creative Engineering Design. Ames, Iowa: The Iowa State University Press, 1960.

Creative Engineering Design examines the attitudes and conscious techniques helpful in developing the professional designer's capability to design. The stultifying effects of habit may be overcome, and creative, direct new answers to design problems found if one: a) recognizes the problem and decides to do something about it; b) defines the problem specifically, in familiar terms and symbols; c) prepares by compiling all past data; d) analyzes the material in view of the defined problems; e) synthesizes a solution from analyzed information; f) evaluates possible solutions, selecting the best; g) presents the necessary information to others in order to execute the solution. This problem solving process may be applied flexibly. The creative engineer should cultivate the following personal traits: self-confidence, constructive nonconformity, willingness to take calculated risks, openness to experience, active knowledge of fundamentals, flexibility, tolerance for ambiguity, intellectual integrity, ability to toy with ideas, ability to suspend critical judgment, ability to think in images, ability to think in analogies. The attitudes and techniques described should prove easily generalizable to administrative problems.

Campbell, Vincent N., and David G. Markle. Identifying and Formulating Educational Problems. Final report, Office of Education Research Contract #OEC 4 7 06 - 2931 - 3064. Berkeley, Calif.: Far West Laboratory for Educational Research and Development, April, 1968. (ED 030 985)

The aim of this project was to develop effective techniques for identifying educational needs and formulating them into well-defined problems. The critical incident technique was used to identify need symptoms perceived by educators selected from a representative sample of West Coast school districts. Criteria for evaluating the adequacy of the problem-formulation product was developed, including outcomes desired, values underlying outcomes, kinds of evidence for outcomes, present conditions, solution possibilities, and immediate action alternatives. Three group problem-defining techniques were compared experimentally, each differing on two dimensions: (1) Whether or not the formulation was structured to obtain the elements listed above, and (2) whether or not the inquiry was directed by an experienced outside formulator. Eighteen three-member groups of educators were used in all. The problem definition produced by each group was evaluated independently by two other educators from the same district. Results indicated that directed groups tended to produce superior problem definitions, and suggest the need for carefully designed problem-formulation training for educators.

Emery, David A. The Compleat Manager: Combining the Humanistic and Scientific Approaches to the Management Job. New York: McGraw-Hill Book Company, 1970.

The Compleat Manager presents managerial methods and alternatives designed to stimulate creativity, turn on motivation, earn deep appreciation, and still keep appropriate authority in the hands of the manager. A variety of concrete suggestions and applicable concepts, rather than one problem-solving process, are described. Part 1 discusses some of the roadblocks to self-improvement and to helping others improve. Part 2 presents systems for coordinating others effectively in the basic tasks that must be accomplished by all management teams, including: setting goals; stimulating innovation; evaluating alternatives; planning, organizing, and controlling; and analyzing deviations from plan.

Grote, Richard C., and Dugan Laird. Solving Managerial Problems: A Workbook. Reading, Mass.: Addison-Wesley Publishing Company, 1971.

This book serves as a practical guide and workbook for skills in managerial problem solving. Utilizing exercises and real life examples, the following six steps are explained: (1) recognize and identify the specific problem that has to be solved; (2) gather all the information necessary to solve the problem; (3) determine the cause of the problem; (4) generate a list of possible solutions or options; (5) pick the one option that will do the best job of eliminating the problem without generating any new ones; (6) put the solution into practice.

Kaufman, Roger A. "An Integrative Model for the Improvement of Education," Planning and Changing, I (October, 1970), pp. 123-130.

This paper briefly presents a process model generally applicable to educational administration, and integrates this generic model with some alternatives or "thrusts" useful in school management. The problem solving model contains six steps, each of which is briefly described: identify the problem, determine the solution requirements and the alternatives, select the strategies and tools, implement the strategies, determine performance effectiveness, and revise performance as required. Each of these is related to "tools", or ways of improving the educational product, including: needs assessment, system analysis, behavioral objectives, program planning and budgeting system, methods-means selection process, and testing national assessment.

Misshauk, Michael J., and John Carlson. "A Guide to Game Design and Model Building," Training and Development Journal, XXIV (December, 1970), pp. 10-12.

This article provides a flow diagram to aid individuals in designing or modifying models, games, or simulations for use in demonstrating teaching concepts or relationships in a meaningful way. The suggested steps, or characteristics of such a model include: the relationships to be demonstrated, the information needed in order to establish these relationships, the types of decisions necessary to process information so as to recognize relationship, the setting up of parameters to reward success for proper analysis of information and resultant recognition of relationships, and determining the type of feedback to be used to aid the participant in improving his decision making in the future.

Morse, Philip M. (ed.). Operations Research for Public Systems. Cambridge, Mass.: The MIT Press, 1967.

This study of operations research systems such as system modeling, mathematical programming, computer simulation, and stochastic processes focuses upon areas of possible application from public organizations, including local government, urban planning, traffic control, transportation networks, medical and hospital practice, and criminology.

Nelson, Charles A. "Management Planning in Higher Education - Concepts, Terminology, and Techniques," Management Controls, XVIII (January, 1971), pp. 3-10.

This article is devoted to a discussion of some major management approaches and techniques that are achieving increasing recognition and acceptance by colleges and universities as essential to the planning process. Terminology and techniques are dealt with first, relative to operating systems, program planning and budgeting systems, management information systems, long-range plans, and planning models. This overview of currently successful approaches includes a general "state of the art" section, and concluding observations based on practical applications.

Optner, Stanford L. Systems Analysis for Business and Industrial Problem Solving. Englewood Cliffs, N. J.: Prentice-Hall, Inc., 1965.

This book attempts to impart a useful structure to systems technology and problem solving, provides definitions of the vocabulary of problem solving and systems, and includes examples from business, government, and other areas. Topics covered in detail include: the characteristics of business problems; the nature of systems; relationships among feedback components; feedback control in problem solving; and dealing with alternatives, assumptions, criteria, and risk.

Patterson, Robert A. "Guidelines for School District Staffing Models." Seattle, Wash.: School Information and Research Services, December, 1969. (ED 042 706)

This study attempts to ascertain if practical and flexible criteria could be developed as guidelines to school districts in meeting current staffing problems. The guidelines dealt with: current educational objectives, psycho-sociological influences, changing methods of education, technology, and new organizational arrangements of a system of personnel management. The paper includes four differentiated staffing models incorporating the principles and guidelines developed.

Pinkham, Fred O. "The Yardstick Project: Management Science on Line in the Schools," Education and Urban Society, III (November, 1970), pp. 71-98.

This article describes two district managerial systems as school administrative aids: a collection of charts and interpretations comprising a management information system labeled the "growth gauge", and a flexible mathematical simulation model custom tailored for planning by local school districts. It is emphasized that both programs are successfully in progress in Ohio schools, products of the Yardstick Project of Cleveland, Ohio. The growth gauge, utilizing standardized tests, provides administrators with more specific information about the performance of schools, organized in a form useful to management, charting pupil achievement by school, classroom, subject, or socio-economic grouping. The Planning Model Yardstick provides detailed information about current, projected, and alternate resource expenditures, indicating stated or implied policies related to decision points.

Wiest, Jerome D. "Heuristic Programs for Decision Making," Harvard Business Review, XLIV (September-October, 1966), pp. 129-143.

Wiest undertakes in this article to define areas of application for heuristic computer programs, both for problems that are "ill structured" (they cannot be expressed in mathematical terms), and for situations where one is not so concerned with finding the one best answer, as with rapidly finding a satisfactory one. Brief illustrations to indicate the range of current applications and suggest the kinds of problems that may be solved include: assembly line balancing, job shop scheduling, facilities location, inventory control, warehouse sites, engineering design, and large project scheduling. It is suggested that a manager should examine the output of a heuristic program with the following four questions in mind: does it produce better results than present methods; are there incremental savings in resources; are computational effort and expense reduced without sacrificing the quality of the work; is the information produced more timely; and are decisions reached earlier than by present methods.

3. Creativity

Barron, Frank. Creativity and Personal Freedom. Princeton, N. J.: D. Van Nostrand Company, Inc., 1968.

Based upon ten years of intensive inquiry into the origins of creativity, this book seeks to provide ways to recognize and foster the spark of creativity. The topics include: personal change and growth through psychotherapy, religious beliefs and philosophy of life as bases for action, the paradox of freedom and necessity, transcendental experience, personal and professional creativeness, the control of agression, and psychedelic drugs.

De Bono, Edward. "The Searching Mind," Today's Education, LVIII (November, 1969), pp. 20-24.

This brief discussion of creative thinking differentiates between vertical (conventional logical processes) and lateral thinking (a new departure in thought). The merits and methods to promote lateral thinking are developed.

Halprin, Lawrence. The RSVP Cycles: Creative Processes in the Human Environment. New York: George Braziller, Inc., 1969.

"Scores" are defined here as symbolizations of processes which extend over time. Scores also allow the communication of such processes over time and space to other people, allowing for participation, feedback, and communications. This broad concept of scores is the basis of Halprin's "RSVP cycles", a planning device designed to be balanced, creative, and flexible, and hence suitable for our complex society. The components of the RSVP cycles are as follows: "resources" which are what you have to work with, including human and physical resources and their motivation and aims; "scores" which describe the process leading to the performance; "valuaction" which analyzes the results of action and possible selectivity and decisions; "performance" which is the resultant of scores and is the style of the process. This ecologically oriented way of looking at change is elaborated with a wide variety of examples, varying from an analysis of the dynamics of an experimental theater group, to an account of the planning and construction of a residential area.

Osborn, Alex F. Applied Imagination: Principles and Procedures of Creative Problem Solving: Third Revised Edition. New York: Charles Scribner's Sons, 1963.

The author develops methods designed to enhance creative problem solving with application to occupational and personal areas. Using clear examples and frequent anecdotes, Osborn discusses such topics as: the importance of imagination, creative and non-creative forms of imagination, factors inhibiting creativity, effect of environment on creativity, methods to develop creativity, the creative problem solving process, preparation and analysis, association of ideas, deliberate idea-finding, individual ideation and team collaboration, and others.

Roweton, William E. "Creativity: A Review of Theory and Research." Madison, Wis.: Wisconsin Research and Development Center for Cognitive Learning, 1970.

This review of the rapidly expanding area of creativity research classifies various theoretical interpretations or explanations into five major categories: (1) definitional approaches; (2) dispositional or personality-based theories; (3) psychoanalytic viewpoints; (4) behavioristic theories; (5) operational approaches. It was determined that no fully matured theoretical statement has been developed and directed specifically toward creativity, existing systems relying upon more general, established systems such as S-R or Freudian psychology.

Zahn, Jane C. Creativity Research and Its Implications for Adult Education. Boston: University of Massachusetts, 1966. (ED 011 362)

This commentary on creativity research defines the creative response and the personality characteristics of the creative person, and locates the creative process and the barriers and facilitators to it. Creative writers and painters are used as examples. Certain teaching methods encourage creativity -- (1) leading the student to question, (2) using analogy, metaphor, and free association of ideas, (3) permitting logical analysis to come late in the discovery process, (4) encouraging skepticism, (5) permitting disorder, (6) leaving blocks of free time for thought, (7) furnishing aesthetic experiences, (8) rewarding creativity, and (9) relating subjects to other disciplines or to wider concepts and problems. A bibliography of 24 references is included.

4. Research Studies and Reports

Allen, R. R., Jerry D. Feezel, and Fred J. Kauffeld. "A Taxonomy of Concepts and Critical Abilities Related to the Evaluation of Verbal Arguments." Madison: University of Wisconsin, August, 1967.

The development of critical thinking abilities is a pervasive and vital objective of American secondary and higher education. Although critical thinking abilities have received recognition as worthy educational goals, few study groups and even fewer teachers are able to develop the means of instruction through which such goals are realized. In this paper are identified concepts and clusters of concepts which define what knowledge a student must have if he is to critically evaluate everyday discourse. The taxonomy, comprised of twelve concept clusters and related critical abilities, is derived from Toulmin's presentation of inference as a rule-constituted activity and from the nature of the field of ordinary discourse. Argument is seen as an activity made possible by the participants' acceptance of rules of inference, by their mutual agreement on what type of reservations must be satisfied to establish forceful claims.

Brissey, F. L., F. R. Fosmire, and R. J. Hills. Problems, Problem-Solving and Human Communication: A Laboratory Approach to Training in Interpersonal Communication. Arlington, Va.: The Directorate of Information Sciences of the Air Force Office of Scientific Research, February, 1969.

Part I of this report presents a conceptual treatment of communication in which the human being is viewed as a goal-attainment system. Signs amd representatives (symbols) are treated both as determinants and results of problem-solving behavior. The goal-attainment problem is defined as a discrepancy between the current state of the system and a specified goal state. Detecting and minimizing the discrepancy requires solutions for designative, prescriptive, and appraisive sub-problems. When problem-solving, a process of selection is mediated by the semiotic behavior of another system, the systems are semiotically coupled, or interdependent. Several forms of the communicative relationship are outlined. Part II presents an approach to communication training referred to as Task-Directed Learning (TDL). Participants formulate and critically examine specimens of their own interpersonal communication in relation to selected measures of effectiveness in solving laboratory problems. Brief descriptions of TDL problems and related materials (Vocom Problems) are included. Part III summarizes objective performance data (time, error and recall) for selected Vocom problems and gives some informal suggestions for research in interpersonal communication.

Davis, Gary A. "The Current Status of Research and Theory in Human Problem Solving." Madison, Wis.: Research and Development Center for Learning and Re-Education, 1966.

This paper summarizes problem-solving theories in three areas: traditional learning, cognitive-Gestalt approaches, and recent computer and mathematical models. In a broad overview of the area, recent empirical studies are categorized according to the type of behavior elicited by the particular problem-solving task. Covert trial-and-error behaviors are applied to the solution of anagram, "insight," water-jar, and arithmetic problems. Overt trial-and-error behavior is used to approach switch-light, classification, probability learning, and numerous miscellaneous tasks.

Glaser, Robert. "Learning," *Encyclopedia of Educational Research*. Fourth Edition. New York: MacMillan, 1969.
The section "Problem Solving and Thinking" in this chapter provides a general overview of the research in this relatively new field. Various emphasis, approaches, and theory directions are described.

Havelock, Ronald G. *Planning for Innovation*. Final report, U. S. Office of Education Research Contract #OEC 3 7 - 070028 - 2193. Ann Arbor: University of Michigan, 1969 (ED 029 171)
This report provides a framework for comprehending the processes of innovation, dissemination, and knowledge utilization (D & U) and it reviews the relevant literature in education and other fields of practice within this framework. D & U is viewed as a transfer of messages by various media between resource systems and users. Major sections analyze characteristics of individuals and organizations which inhibit or facilitate this transfer. The process is presented at four levels; the individual, the interpersonal, the organization, and the social system. Additional chapters analyze messages, media, phase models, and knowledge-linking roles. Models of D & U can be placed into three perspectives: (1) "Research, Development and Diffusion", (2) "Social Interaction", and (3) "Problem Solving". A "linkage" model is proposed as a synthesis. Successful linkage is achieved when user and resource system interact collaboratively, simulating each others' problem solving behavior. Seven factors highly related to successful D & U are: (1) *linkage* to internal and external resources; (2) degree of *structure* in resource system, user, message and medium; (3) *openness* of user and resource systems; (4) *capacity* to marshall diverse resources; (5) *reward*; (6) *proximity* to resources and other users; (7) *synergy*, i.e., the variety, persistence, and synchronization of messages and media. Implications are drawn for research, development, practice, and policy. An extensive bibliography is included.

Hoffman, L. Richard. "Group Problem Solving," *Advances in Experimental Social Psychology*, Leonard Berkowitz (ed.). New York: Academic Press, 1965, pp. 99-127.
This chapter presents a thorough survey of research in the area of group problem solving within the following framework: Section II examines "Factors Inhibiting Effective Problem Solving," including pressures toward uniformity, the sources of such pressure, participation biases, group structure, and failure to search for problems; Section III addresses "Factors Promoting Effective Problem Solving," including group composition, group process, leadership in group problem solving, and acceptance. Section IV is a summary of "The Present State of Group Problem-Solving Research."

Kleinmuntz, Benjamin (ed.). Problem Solving: Research, Method, and Theory. New York: John Wiley and Sons, Inc., 1966.

This volume integrates several major viewpoints on problem solving as they were voiced by twelve authorities at the first annual Symposium on Cognition held at the Carnegie Institute of Technology in April, 1965. Discussions and papers in this volume present detailed analyses of learning theory and complex information processing approaches to problem solving. Addressed to all informed psychologists, this book defines rigorous and experimental approaches to the study of problem solving. Included are works by Bert F. Green, Jr., Adriaan D. de Groot, Jeffrey M. Paige, Herbert A. Simon, Donald W. Taylor, Robert M. Gagne, John R. Hayes, Allen Newell, Israel Boldiamond, B. F. Skinner, Arthur W. Staats, D. E. Beslyne, and Gaslie A. Forehand. Of particular interest are the following: "Memory, Goals, and Problem Solving" by John R. Hayes, a detailed review of recent research with the type of problem solved by discreet steps, in order to explore the functioning of human information processing in the solution of such problems; "Human Problem Solving: Internal and External Events" by Robert M. Gagne, an attempt to clarify findings among problem solving researchers, and provide a conceptual basis for further experimentation; "Current Trends in Problem Solving" by Bert F. Green, Jr., a review of the major experiments, concepts, and theories on problem-solving to date; and "An Operant Analysis of Problem Solving" by B. F. Skinner, a conceptualization of problem solving in "operant" terms.

Maier, Norman F. Problem Solving and Creativity in Individuals and Groups. Belmont, Calif.: Brooks/Cole Publishing Company, 1970.

Maier's volume is a collection of published and unpublished studies of group and individual problem solving conducted under Maier during the last ten years. Studies that have implications in psychological theory have largely determined our selection. Since various aspects of theory are involved, the studies have been grouped into eight parts, Part Nine being added as a concluding section. Each part is preceeded by an introduction that raises basic issues relevant to theories around which research on problem solving in general has centered.

Osborn, William C., and Barbara Ettinger Goodman. "A Tentative Organizational Schema for Decision-Making Problems." Alexandria, Va.: Human Resources Research Organization, July, 1966.
This is an attempt to delineate the component response processes that lead to real-life decisions in psychologically complex situations. The tentative organization of decision behavior followed was a) to identify and descriptively define the relevant stimulus and organismic factors, and b) especially to schematize the response dimensions involved, in such a way as to derive a tentative response matrix. Resulting from this is an organizational schema for use in analyzing the response aspects of the decision-making process in terms of the pertinent psychological dimensions of decision behavior.

Piele, Philip K., and Terry L. Eidell (eds.). *Social and Technological Change: Implications for Education*. Eugene, Oreg.: University of Oregon Press, 1970.
This collection of five papers by leading figures in the area of social and technological change, was jointly undertaken by the ERIC Clearinghouse on Educational Administration, and the Center for the Advanced Study of Educational Administration. All papers included focus upon the general theme of social and technological change, and seek to synthesize present knowledge, and project the future development of knowledge of the particular topic. The papers include: "Nature of Our Changing Society: Implications for Schools," by Willis W. Harman; "Teacher Militancy," by Richard C. Williams; "System Approaches to Education: Discussion and Attempted Integration," by Roger A. Kaufman; "System Approaches to Educational Planning," by Marvin C. Alkin and James E. Bruno; and "Educational Management Information," by John A. Evans.

Riedesel, C. Alan. "Problem Solving: Some Suggestions from Research," *The Arithmetic Teacher*, XVI (January, 1969), pp. 54-58.
This article lists ten suggestions for the improvement of problem-solving abilities among arithmetic students, as suggested by a wider sampling of research. An extensive bibliography on research in problem-solving is included.

Rosvoe, P. E. *A Provisional Survey and Evaluation of the Current Forecasting State of the Art for Possible Contributions to Long-Range Educational Policy Making*. Santa Monica, Calif.: System Development Corporation, 1967.
This report presents the results of a provisional survey of existing forecasting methods in an attempt to evaluate their utility for an operational center responsible for supporting future oriented policy formulation and decision making in the field of education. The paper examines such

areas as what functions an operational center should perform, the ability of existing forecasting methods to contribute to such an operational center, and the vital factors contributing to a public dialogue about the future of education.

Schmuck, Richard A., and Philip J. Runkel. Organizational Training for a School Faculty. Eugene, Oreg.: University of Oregon Press, 1970.

This book-length report presents a detailed account of a CASEA (The Center for the Advanced Study of Educational Administration) experiment at Highland Park Junior High School in Beaverton, Oregon, designed to increase the organizational problem-solving ability of a school faculty by improving communication skills. The CASEA team worked to improve Highland Park by increasing the communicative abilities of its groups, so that honest, direct, and innotative action could be internally and independently developed by the resident school faculty. Using summer workshops, small group interaction, and periodic "intervention" throughout the school year, the report claims that a number of desirable outcomes were at least partly due to the intervention. Many teachers began using a greater variety of more effective group techniques in their classrooms. Collaborating groups of teachers increased in strength and number. The Principal's Advisory Committee became potently and specifically representative rather than merely advisory. Faculty turnover decreased well below the rates at the other junior high schools in the district.

Schneider, Jerry B. "Solving Urban Location Problems: Human Intuition Versus the Computer," Journal of the American Institute of Planners, XXXVII (March, 1971), pp. 95-99.

This experiment compared the ability of human intuition with that of a computer in the selection of a near-optimal location pattern for ambulance dispatch centers in a hypothetical urban area. Results indicated that maximum problem solving performance may be realized by a combination of human intuition to cut down the number of alternatives, and computers to examine these alternatives systematically.

Seidel, Robert J., and Harold G. Hunter. "The Application of Theoretical Factors in Teaching Problem Solving by Programed Instruction." Alexandria, Va.: Human Resources Research Organization, April, 1968.

The aim of this continuing research into training technology was to devise guidelines for applying programmed instruction to training that involves learning principles and rules for use in problem solving. A portion of the Army's ADPS Programing Specialist Course was programmed in order to explore automated instruction. Experimental versions of the course were administered to over 900 subjects in various experimental groupings. Criterion and retention tests based on actual job problems were used to measure subjects' performance, along with in-training measures.

"Training Methods: An Analysis of the Research Findings." Research Task No. 234. (n.p.), Royal Air Force Technical Training Command, June, 1966. (ED 024 000)

This report for the Royal Air Force Training Command surveys research on different instructional methods and variables. Although research available is often vague, the relative qualities and characteristics of the following instructional methods are examined: lectures, lesson demonstration, programmed instruction, case studies, tutorials, brainstorming, discussion groups, sensitivity training, role playing, system training, discovery training, student centered learning, and instructor centered learning. Suitability of methods in realizing various educational goals is discussed, and variables influencing teaching methods are examined.

5. Theory and Methods

Chavchanidze, Vladimir. "Introduction of Psycho-intellectual Activity in Long-Term Forecasting and Planning of Research: Psychoheuristic Programming," Technological Forecasting, I (1969), pp. 129-139.

This article presents a system for the nonformal and nonmachine solving of problems in the planning and forecasting of research. Such a need exists, it is claimed, as most scientists interviewed admitted vague planning, goals, and outputs. Investigation revealed that the most effective means of scientific search are those which lead to cybernetically specified objectives. The method herein described was said by the author to have helped researchers specify certain problems or detect problems which had not arisen before.

Drucker, Peter F. "The Effective Decision," *Harvard Business Review*, XLV (January-February, 1967), pp. 92-98.

Drucker outlines six sequential steps comprising a sound decision-making process: (1) the classification of the problem; (2) the definition of the problem; (3) the specifications which the answer to the problem must satisfy; (4) the decision as to what is "right," rather than what is acceptable, in order to meet the boundary conditions.

Gordon, William J. J. *Synectics: The Development of Creative Capacity*. London: Collier-MacMillan Ltd., 1961.

This book is an interim report on continuing research designed to develop and test an operational concept of human creativity. The evolution of a Synectics theory of creative process is detailed, along with the hypotheses that underlie the theory and specific case examples of the implementation of the theory. Synectics theory applies to the integration of diverse individuals into a problem-stating, problem-solving group. Topics discussed include: history of synectics researches into creative activity, the operational mechanisms, synectics in the industrial model, the commonplace and expertise, play and irrelevance, and social applications. A large bibliography is included.

Gregory, Carl E. *Instructor's Manual to Accompany "The Management of Intelligence."* New York: McGraw-Hill Book Company, 1967.

This manual is intended to offer advice and suggestions to instructors using *The Management of Intelligence, Scientific Problem Solving and Creativity*. The manual, as the book, is based upon the hypothesis that good techniques of scientific inquiry and problem solving can also be effective methods of teaching and learning. This research oriented instruction approach is heuristic and discovery oriented.

Gregory, Carl E. *The Management of Intelligence: Scientific Problem Solving and Creativity*. New York: McGraw-Hill Book Company, 1967.

This book attempts to survey the basic principles, methods, and concepts of science and creativity to accomplish two objectives: to provide an understanding of scientific problem solving (SPS), and to provide a research-oriented approach to real problems as a classroom learning method. Gregory presents a detailed discussion of the steps of SPS, along with frequent case examples. The blocks to effective creative research are also summarized. Over thirty creative functions, inherently a part of scientific problem solving, are identified. In addition, over forty "methods", "probes", and "stimulators" of creative thinking, commonly used in business, are defined and related adjunctly to scientific reasoning. Recent research pertaining to creativity is reviewed. The book frequently includes charts, diagrams, schemata, summaries, review questions, supplementary sources, and case examples.

Guilford, J. P. The Nature of Human Intelligence. New York: McGraw-Hill Book Company, 1967.

In chapter 14, "Problem Solving and Creative Production," Guilford discusses the most complex of recognized intellectual activities, the history of the problem solving concept is briefly reviewed, a model of the problem solving procedure is proposed, and a variety of related topics are discussed in depth. These include: the nature of problem solving and creative production, covering the role of information, incubation, intuition, flexibility, implications, evaluation, general conditions affecting creative production, covering group thinking, effects of competition, types of environments, training in creative thinking, and computer simulation of thinking.

Mackenzie, R. Alec. "A Management Process Model for Training and Development Directors," Training and Development Journal, XXV (May, 1971), pp. 25-30.

This article proposes a detailed model showing the different elements, functions, and activities which are part of the management process. The model serves as: a move toward professionalism for training and development personnel; a representation of management as a process; a conceptual aid; an aid in setting goals and objectives; an aid in the selecting and sequencing of courses; a learning aid.

Manheim, Marvin L. "Problem-Solving Processes in Planning and Design." Cambridge, Mass.: Massachusetts Institute of Technology, January, 1967.

This paper develops a general theory of problem-solving processes particularly applicable to the complex areas of planning and design, utilizing computers to form a "man-machine" problem solving process. A general conceptual model of such a man-machine system interacting with a problem to develop, select, implement, monitor and revise actions is developed, following an Appendix containing a detailed discussion of related concepts, such as generating choice actions in a preference ordering. The problem solving model, based upon a transportation problem, is designed to demonstrate the potential of the computer in what the author terms "ill-defined" areas of planning and design, such as urban planning and architecture. The role of the computer in problem solving can roughly be termed "prediction", while "choice" is least applicable, with "search" and "evaluation" between these extremes. This paper basically provides a useful general theory of the utilization of computers as a resource in non-mathematical, highly complex problem-solving situations. However, these are general considerations, rather than specific guidelines and procedures applicable to a variety of administrative problems.

Newall, Allen, Herbert A. Simon, and John C. Shaw. "Elements of a Theory of Human Problem-Solving," Psychological Review, LXV (1958), pp. 151-166.

A digital computer is used in this article to set forth the elements of a theory of human problem solving, together with some evidence for its validity drawn from the currently accepted facts about the nature of problem-solving. A detailed example is developed through the "logical Theorist" experiment, involving a close study of the methods applied by a computer to solve problems in symbolic logic. Many resemblances were found in problem-solving method and sequence between the computer and human problem-solving processes as they have been described in psychological literature.

Poyla, G. How to Solve It. Garden City, New York: Doubleday and Company, Inc., 1957.

Poyla, an experienced mathematician and teacher, intends this book as an aid to understanding not only the solution of this or that problem but the motives and procedures of solution as well. The methods of problem solution described, though originating from mathematics, and illustrated entirely through mathematical examples, should prove generalizeable to an extent. The book is divided into four parts: including a discussion of Poyla's theory of problem solving, a brief illustrative dialogue called "How to Solve It", an extensive "Short Dictionary of Heuristics", and a section of advanced problems and solutions. The book is suitable both for the student who wishes to understand the methods contributing to solving mathematical problems, and to the teacher who would like to encourage this understanding among his students.

6. Training

Davis, Gary A., and Joseph A. Scott (eds.). Training Creative Thinking. New York: Holt, Rinehart and Winston, Inc., 1971.

This collection of articles examines various strategies for increasing creative productivity, particularly in industry and the schools. Also included are articles which analyze such critical variables as the physical and psychological atmosphere, intellectual and nonintellectual characteristics of creative individuals, testing for creativity, personal and social "barriers" to creativity, and "selling" one's ideas.

Edwards, M. O. "Possibilities for Professional Development in Creative Problem Solving at SRI." Stanford, Calif.: The Stanford Research Institute Sponsored R & D Program, 1966.

This report investigates the usefulness of creative problem-solving courses, as they are currently presented, in industrial and other organizations, as determined through a questionnaire. It recommends an on-going program at SRI, based upon results of an interest survey within a portion of SRI, and the results of an experimental SRI workshop. The workshop in creativity is vriefly described, the results of which were mixed. The report includes a "Selected Bibliography on Creativity for Scientists and Engineers."

Fox, Robert S., *et al*. *Diagnosing and Improving the Professional Climate of Your School*. Volume III. Washington, D. C.: National Training Laboratories Institute for Applied Behavioral Science, 1970. (ED 042 708)

This manual is directed to aid staff members to improve the professional climate of their schools. The guide has two main parts: part one begins with a description of the program, and some concepts and theories about the school as a social system; the reamining chapters cover solving problems for school improvement, who's responsible for what, how do we typically do things, and using one another's resources.

Graham, Robert G., and Clifford F. Gray. *Business Games Handbook*. New York: American Management Association, Inc., 1969. (ED 042 954)

This handbook provides training directors with an organized list of business games, sources, and related information. Part I contains introductory readings concerning the concept of the game. Part 2 contains abstracts of more than 200 games in current use. Part 3 is a bibliography of articles and books.

Havelock, Ronald G. *A Training Model for Change Agents in State Education Agencies*. Interim Report, U. S. Office of Education, Research Contract #OEC 0 8 080603 - 4535 (010). Ann Arbor: University of Michigan, June, 1970.

This report contains a plan to train staff members in state education agencies to serve as general consultants on the planning and management of innovation. The program is conceived as a 10-day training sequence distributed over a one year period with intervening reading and writing assignments and several types of on-the-job practice. It is intended to be used in conjunction with A GUIDE TO INNOVATION IN EDUCATION (a field manual on collaborative problem-solving through the effective use of resources) previously submitted to the U. S. Office

of Education under this contract. The program is systematic and intensive, calling for a high investment of intellect and behavior by trainers and trainees. This program singles out particular individuals in a strategic location, the state education agency, as the "change agents", with the view to their becoming, over time, a core training staff for the agency and for the state system as a whole with respect to these same skills. In this sense, therefore, the proposed program is not for the training of change "agents" as much as it is for the training of trainers in change planning and managing skills. The report outlines the training course for change agents in close detail, specifying: the course rationale, objectives, and emphases; the qualifications of trainees; anticipated outcomes of training; a detailed outline and schedule of the training procedure; guidelines for the installation of trainees in state agency positions; suggested criteria for evaluating; and suggested procedures for the feedback and utilization of evaluative data. The value of this report is limited, for it presents an outline (albeit detailed) of a training procedure, not a self contained body of knowledge accessible to the reader. It is a description of a course, not a course itself. Further, the course depends heavily upon such readings as Havelock's A Guide to Innovation in Education, and the reader must go directly to this source. The section on "Handling Misunderstanding and Conflict" contains a brief discussion on the solving of communication problems.

Jung, Charles, Rene Pino, and Ruth Emory. RUPS: Research Utilizing Problem Solving. Classroom version, Leader's Manual. Portland, Oreg.: Northwest Regional Educational Laboratory, 1970.

This training manual is intended to provide concepts, skills, and techniques in retrieving and utilizing knowledge while in the process of identifying and diagnosing classroom problems and designing action plans to resolve them. Evaluation becomes a pattern of repeated objective diagnosis in this process. The design is for a five-day workshop followed by two 3-hour meetings while engaged in an on-the-job application project. Emphasis is upon improving problem awareness, problem solving, data processing, and communicative skills of classroom teachers through the use of a highly specific training procedure. The training manual is arranged in accordance with the sequence of sixteen "subsets" of the workshop design. Each subset includes an instructional strategy, a listing of procedures, materials, and instructions.

Otto, Calvin R., and Rollin O. Glaser. The Management of Training; A Handbook for Training and Development Personnel. Reading, Mass.: Addison-Wesley Publishing Company, 1970. (ED 042 102)

This manual is intended to provide comprehensive information to training personnel in order to create and administer effective programs. Part 1 covers basic responsibilities of program directors, part 2 covers conceptual skills and kinds of expertise required by directors, while part 3 describes major techniques and types of training resources. Included are charts, photos, footnotes, bibliographies, information sources, and an index.

Parnes, Sidney J. Creative Behavior Guidebook. New York: Charles Scribner's Sons, 1967.

The guidebook is designed for use by educators seeking to foster creativity in school and industry. It is meant as a complete reference source and teaching manual for classroom development of creative behavior. Part I of the guidebook contains four chapters of introductory material, including a philosophy of creativity, a consideration of the nature of creative behavior and its relation to intelligence, a survey of research on the enhancing of creativity, and a discussion of basic developmental principles. Part II contains an explanation and detailed outline of a course in creative problem solving, listing experiences and exercises, and suggestions for expanded or reduced versions. This section also includes an extensive bibliography. The Creative Behavior Workbook (New York: Charles Scribner's Sons, 1967) contains classroom and self-study exercises that are meant to be used in conjunction with the Guidebook.

Scheinfeld, Daniel R., and Melita Parker. "The Sharper Minds Program: Group Problem-Solving for the Disadvantaged." Chicago: Institute for Juvenile Research, 1969. (ED 034 827)

This report suggests the use of group problem-solving techniques in the education of disadvantaged children. Active learning and creative societal participation result from aggressive verbal exchange geared to solving actual life problems.

Straus, David A., R. Christopher Thorsen, and Ruth E. Thorsen. "Tools for Change: A Basic Course in Problem-Solving." (n.p.), Interaction, Inc., September, 1969.

This is a basic course in problem-solving which describes a set of basic heuristic processes designed to significantly enhance productivity and flexibility in thinking, and suggests the use of games to foster awareness of these principles, and a common "language of process" to improve communication among problem-solvers. The course model provided, although flexible, provides for the presentation of a series of units each focused on a subject area or set of heuristic processes or strategies. Alternating between "experience" and "discussion of experience", each unit relates to three two-hour sessions taught on separate days. The report includes a general bibliography, a glossary of heuristic terms a detailed course outline, and lists of films and games available from commercial outlets in the San Francisco Bay area.

Venditti, Frederick P. Teaching in Valleybrook Elementary School: A Simulation Game Focusing Upon Problems of the Racially Desegregated School. Knoxville: Tennessee University, 1968. (ED 032 240)

This is a model of a majority-white elementary school, simulating problems in: pupil behavior; teachers relationships with pupils, colleagues, and parents; individualization of instruction; curriculum modification and construction; and the selection of instructional materials. Complete accessary materials are included.

SECTION SIX
BIBLIOGRAPHIES AND ANNOTATED BIBLIOGRAPHIES

Alternative Organizational Forms: Analysis of Literature and Selected Bibliography. Eugene, Oreg.: ERIC Clearinghouse on Educational Administration, September, 1970.

The analysis and bibliography contained in this publication focus on the following questions:

1. What distinctive patterns for organizing instruction at the classroom, building, and school system levels exist?
2. Is there evidence of effectiveness of these in inner-city, suburban, and rural settings?
3. Is there evidence on costs and advantages of such alternatives?
4. How might alternatives be developed and tested?

It is stated that research findings have yet to demonstrate clearly the effectiveness of alternative organizational forms over traditional forms, even though participants in new forms have been favorably disposed to them. The report concludes that a more firmly established research base is needed to establish the effectiveness of each of these forms.

Anderson, Robert H. Bibliography on Organizational Trends in Schools. Washington, D. C.: Center for the Study of Instruction, National Education Association, 1968. (ED 024 125)

This bibliography includes sections on educational reforms and trends; cooperative teaching and staff utilization; non-graded school organization; pupil grouping and individualized instruction; research and development; reporting pupil progress; computers in education; architecture, equipment, and space utilization; and audiovisual resources.

An Annotated Bibliography of Benefits and Costs in the Public Sector. Philadelphia: Research for Better Schools, Inc., November, 1968. (ED 026 744)

This annotated bibliography presents nearly 3,000 entries dealing with problems of economic efficeincy in the public sector. Entries deal with techniques such as benefit/cost analysis, cost-effectiveness analysis, operational analysis, planning-programming-budgeting-systems (PPBS), and others. Particular emphasis is directed to the field of education.

BACIE Register of Programmed Instruction in the Field of Education and Training in Commerce and Industry. Volume 2. London: British Association for Commercial and Industrial Education, 1968. (ED 031 652)

This annotated catalog of programmed instructional materials lists the following: programs available in the United Kingdom; programs dealing with industrial and commercial training and related further education; and information as supplied by the authors or producers of programs.

Berkman, Herman J. Planning Theory. Monticello, Ill.: Council of Planning Librarians, 1967.

This bibliography of almost 300 items was developed for a course in planning theory and it is strongly oriented towards mathematical models. It lists basic works (books and articles) on planning theory; books and articles on the nature of planning, methods and goal formation; models for planning; land use models; decision-making models; transportation models; economic models and population models.

Burns, J. L. A Catalog of Computer Programs for PERT. Baltimore, Administrative Services Division, Westinghouse Electric Corporation, 1963.

This document presents a survey of PERT computer programs including program synopses, program descriptions, program characteristics, output reports, program modifications, and a list of users. Information was collected by Project SPERT (Share PERT) using a questionnaire.

Catanese, James. Systemic Planning: An Annotated Bibliography and Literature Guide. Monticello, Ill.: Council of Planning Librarians, 1969.

This is the Council's Exchange Bibliography 91 and it is concerned with articles and books that integrate the techniques of systems analysis, cybernetics and decision theory with planning. It is a selective, rather than a complete, bibliography.

Chorness, M. H., C. H. Rittenhouse, and R. C. Heald. Use of Resource Material and Decision Processes Associated with Educational Innovation: A Literature Survey. Berkeley, Calif.: Far West Laboratory for Research and Development, December, 1968.

An annotated bibliography is presented.

A Classified Bibliography of Decision Making in School System Administration. Philadelphia: Government Studies and Systems, Inc., 1970.

This bibliography concentrates on reports of systems in actual operation. There are over 300 entries in the areas of school administrators, decision processes, politico-economic influences and PPBS.

Cook, Desmond L. "References on Network Planning in Education Research Management, Project Selection, and Program Management." Columbus, Ohio: Ohio State University Educational Research Management Center, 1966. (ED 020 580)

This bibliographic listing of 109 related addresses, articles, books, microfilms, monographs, reports, and other items, published between 1959 and 1968, includes 39 items on network planning, 48 items on research management, 13 items on project selection, and nine items on program management.

Dumas, Neil S. *The Decision Maker's Guide to Applied Planning, Organization, Administration, Research, Evaluation, Information Processing and Analysis Techniques*. Gainesville, Fla.: Regional Rehabilitation Research Institute, 1970. (ED 042 199)

This is a guide to accounts of experiences in organization, administration, planning, decision making, management, and computer science, arranged in three parts: (1) a subject index; (2) an author index; and (3) an abstract section.

Dunaye, Thomas M. *Health Planning: A Bibliography of Basic Readings*. Monticello, Ill.: Council of Planning Librarians, 1971.

This book contains a list of over 150 reports, articles, books and bibliographies for those interested in the general field of health planning.

Educational and Social Demands on the Schools: Analysis of Literature and Selected Bibliography. Eugene, Oreg.: ERIC Clearinghouse on Educational Administration, University of Oregon, September, 1970.

Both the analysis and the bibliography focus on the expectations of the public for the schools, particularly with respect to variations in demographic setting, age, ethnic background, and income.

Educational Planning: A Bibliography. Paris, France: International Institute for Educational Planning, 1963.

This is an annotated bibliography prepared by a department of UNESCO. It is divided into the following sections: the purpose and value of educational planning, the preparation of educational plans, the organization and administration of educational planning, and case materials. It is particularly valuable for non-American items published before 1963.

Edwards, Ward. *A Bibliography of Research on Behavioral Decision Processes to 1968*. Ann Arbor: Department of Psychology, University of Michigan, January, 1969.

This book contains 1393 items in the area of decision-making techniques in the behavioral area.

ERIC Abstracts: A Collection of ERIC Document Resumes on Citizen Involvement in the Control of Schools. Washington, D. C.: American Association of School Administrators, 1970.

Forty-one items on citizen involvement in the schools are annotated in detail.

ERIC Abstracts: A Collection of ERIC Document Resumes on Collective Negotiations in Education. Washington, D. C.: American Association of School Administrators, August, 1969.

This document is one of a series of listings of ERIC abstracts compiled from the Educational Resources Information Center's (ERIC) monthly catalog, Research in Education. Abstracts are included which were listed under the following descriptors: collective negotiation, collective bargaining, strikes, sanctions, and teacher militancy. This compilation is complete through June, 1969.

ERIC Abstracts: A Collection of ERIC Document Resumes on Educational Assessment. Washington, D. C.: American Association of School Administrators, September, 1970.

This document is one of a series of compilations of ERIC abstracts taken from the Educational Resources Information Center's (ERIC) monthly catalog, Research in Education. Abstracts are included which were listed under the following descriptors: evaluation, evaluation criteria, evaluation methods, evaluation techniques, and program evaluation. The listing is complete through August, 1970.

ERIC Abstracts: A Collection of ERIC Document Resumes on Educational Planning. Washington, D. C.: American Association of School Administrators, 1971.

Fifty-one items on critical path methods, educational planning, operations research and program budgeting are described in detail.

ERIC Abstracts: A Collection of ERIC Document Resumes on Human Relations in Educational Administration. Washington, D. C.: American Association of School Administrators, 1969.

This booklet contains detailed annotations for 21 items on human relations in educational administration.

ERIC Abstracts: A Collection of ERIC Document Resumes on Impact of Racial Issues on Educational Administration. Washington, D. C.: American Association of School Administrators, 1970.

This bibliography contains 46 annotated items on school racial policy, faculty desegregation, racial politics, integration, teacher training for desegregation, desegregation case histories, planning for desegregation and bussing.

ERIC Abstracts: A Collection of ERIC Document Resumes on Inservice Education for Staff and Administrators. Washington, D. C.: American Association of School Administrators, 1970.

This bibliography contains 64 annotated items on in-service education for education administrators and their staffs.

ERIC Abstracts: A Collection of ERIC Document Resumes on Organization Renewal: Change and the School Administrator. Washington, D. C.: American Association of School Administrators, March, 1971.

This document is one of a series of listings of ERIC abstracts compiled from the Educational Resources Information Center's (ERIC) monthly catalog, Research in Education. Abstracts are included which were listed under the following descriptors: administrative organization, organizational change, and organizational climate. This compilation is complete through February, 1971.

ERIC Abstracts: A Collection of ERIC Document Resumes on Performance Objectives. Washington, D. C.: American Association of School Administrators, 1970.

Fifty-one items on educational objectives, performance criteria and performance factors are annotated in detail.

ERIC Abstracts: A Collection of ERIC Document Resumes on Politics and Power Structure: Influence on Education. Washington, D. C.: American Association of School Administrators, 1969.

This bibliography contains 31 annotated items on the impact of politics on schools and universities, on how people's attitudes towards society affects schools, and on the effect of a culture's value systems on education.

ERIC Abstracts: A Collection of ERIC Document Resumes on Program Budgeting and Cost Analysis. Washington, D. C.: American Association of School Administrators, January, 1970.

This document is one of a series of listings of ERIC abstracts compiled from the Educational Resources Information Center's (ERIC) monthly catalog, Research in Education. Abstracts are included which were listed under the following descriptors: program budgeting, cost effectiveness, and program costs. This compilation is complete through October, 1969.

ERIC Abstracts: A Collection of ERIC Document Resumes on Public Relations in Education. Washington, D. C.: American Association of School Administrators, October, 1969.

This document is one of a series of listings of ERIC abstracts compiled from the Educational Resources Information Center's (ERIC) monthly catalog, Research in Education. Abstracts are included which were listed under the following descriptors: public relations, publicize, school community relationship, and human services. This compilation is complete through September, 1969.

ERIC Abstracts: A Collection of ERIC Document Resumes on Systems Approaches in Education. Washington, D. C.: American Association of School Administrators, March, 1970.

This document is one of a series of listings of ERIC abstracts compiled from the Educational Resources Information Center's (ERIC) monthly catalog, Research in Education. Abstracts are included which were listed under the following descriptors: systems approach, systems analysis, critical path method, and systems concepts. This listing is complete through January, 1970.

ERIC Abstracts: A Collection of ERIC Document Resumes on The School Principalship: Crisis in Middle Management. Washington, D. C.: American Association of School Administrators, 1970.

This annotated bibliography contains 75 annotated items on the role and problems of principals.

ERIC Abstracts: A Collection of ERIC Document Resumes on Urban Crises in Educational Administration. Washington, D. C.: American Association of School Administrators, 1970.

This bibliography contains 57 annotated items on urban problems that affect the administration of educational systems, such as immigration from rural areas, financing, race, poverty, facilities planning, ethnic mixtures, state-local relations, relations between social classes, the effect of the business community, decentralization, community action, etc.

Guttenberg, Albert F. Content Analysis for City Planning Literature. Monticello, Ill.: Council of Planning Librarians, 1967.

This paper discusses the methods and subjects of current urban planning literature. There is also some discussion of the types of people who write such literature, the places where such literature can be found, the terminology used, the literature guides available in this field, suggestions for the further study and use of the available literature and a bibliography on urban planning literature.

Hahn, Marshall. Review of Research on Creativity. Minneapolis: Minnesota Research Coordinating Unit in Occupational Education, September, 1968. (ED 029 090)

This literature review on creativity surveys 92 references from 1906 to 1966. It is one of a series on subjects pertinent to vocational, technical, and practical arts education. Major areas of the review are: Defining Creativity, Measuring Creativity, Creativity and Intelligence, Characteristics of the Creative Individual, Teaching and Creativity and Inhibitors of Creativity.

Hall, Elizabeth H. PERT - A Report Bibliography. (n.p.): Armed Services Technical Information Agency, Defense Documentation Center, March, 1963.

A listing of 383 references covering ASTIA documents, books, journals, reports, conference proceedings, and monographs relating to PERT and PERT modifications, this document covers the period October 1958 through February 1963.

Hall, John S. Implementing School Desegregation: A Bibliography. Eugene, Oreg.: ERIC Clearinghouse on Educational Administration, University of Oregon, March, 1970.

A bibliography of 183 documents is presented in four parts. Part I includes assessments of court decisions, legislation, and administrative rules and regulations affecting school desegregation. The literature listed in Part II describes the patterns of interaction and influence among school officials, desegregation supporters, desegregation opponents, and other interest groups, and assesses the impact of these interactions on the level of community conflict and cooperation during desegregation. Documents cited in Part III offer specific guidelines and recommendations for implementing desegregation. Part IV includes evaluations of the impact of the desegregation policy on both national and local levels.

Hall, John S. Models for Rational Decision Making: Analysis of Literature and Selected Bibliography. Eugene, Oreg.: ERIC Clearinghouse on Educational Administration, University of Oregon, September, 1970.

The analysis and bibliography combined here focus on: (1) current or developing decision-making models and strategies in education and evidence of effectiveness, and (2) existing or possible alternative models of authority systems and decision processes in schools.

Havelock, Ronald G., Janet Huber, and Shaindel Zimmerman. Major Works on Change in Education: An Annotated Bibliography and Subject Index. Ann Arbor, Mich.: Center for Research on Utilization of Scientific Knowledge, University of Michigan, March, 1969.

This annotated bibliography of 38 items is for reference by practitioners, researchers, and instructors who are concerned with planned change, innovation, dissemination, and knowledge utilization. Three criteria for selection were used: (1) general coverage of a range of topics relevant to educational change, (2) in book form, and (3) published and available in education libraries, book stores, or by ordering from indicated sources.

Introduction Plans (Marketing Plans): Analysis of Literature and Selected Bibliography. Eugene, Oreg.: ERIC Clearinghouse on Educational Administration, University of Oregon, September, 1970.

The analysis and bibliography combined here focus on (1) evidence of means of disseminating new instructional programs, and (2) evidence of how to foster local adoption of new instructional programs.

Jones, Garth N. *Planning, Development, and Change: A Bibliography on Development Administration*. Honolulu, Hawaii: East-West Center Press, 1970.

This partially annotated bibliography encompasses literature on planned change within the field of organizational theory. Entries were included on research approaches to planned organizational change and studies which contributed to the understanding of planned organizational change.

Kratz, Robert N. The Second Chapter of an Unpublished Doctoral Dissertation, Temple University, Philadelphia, 1971.

This review of the literature and accompanying bibliography thoroughly examines the literature of change, planned change, innovation and planning. The review of the literature runs more than 130 pages with more than 600 footnotes referring to the bibliography section.

Linking Schools and State Education Departments to Research and Development Agencies: Analysis of Literature and Selected Bibliography. Eugene, Oreg.: ERIC Clearinghouse on Educational Administration, University of Oregon, September, 1971.

The analysis and bibliography combined here focus on (1) evidence of existing and developing linkages of research and development (R&D) agencies to state and local units--Educational Resources Information Center (ERIC), regional educational laboratories, university-based R&D center, Title III centers, etc.; (2) adequacy and unmet needs for such linkages; and (3) possible alternatives for more effective and efficient linkages.

Linking Schools to State Education Departments: Analysis of Literature and Selected Bibliography. Eugene, Oreg.: ERIC Clearinghouse on Educational Administration, University of Oregon, September, 1970.

The analysis and bibliography combined here focus on (1) current patterns of linkage of local districts to state education departments--immediate units for regulation or services, direct linkage between state and local units, etc.; (2) evidence of effectiveness and cost-benefits of such linkages in states having differing sizes, resources, statutory provisions, etc.; and (3) proposed, developing, or potential types of state-local arrangements.

Loye, David (ed.). Research at ETS: Projects and Publications. Princeton, N. J.: Educational Testing Service, 1970.

This booklet is a survey of 205 research studies undertaken at the Educational Testing Service (ETS) from July, 1968 to June, 1969.

Maguire, Louis M. An Annotated Bibliography of the Literature on Change. Philadelphia: Research for Better Schools, Inc., July, 1970.

An annotated bibliography of some 600 items, including books, articles in books, and papers and speeches, is presented. It is noted that some annotations contain a general abstract, while others do not and cite specifics in the work.

Management Development and Supervisory Training. Current Information Sources, Number 26. Syracuse, N. Y.: ERIC Clearinghouse on Adult Education, 1969. (ED 033 251)

This annotated bibliography contains 210 items, including: bibliographies and other information sources; studies on training needs, career patterns, learning behavior, and program planning; human relations training, group training, simulation, and other techniques; academic programs, evaluations, and training surveys.

Management Information Systems: Analysis of Literature and Selected Bibliography. Eugene, Oreg.: ERIC Clearinghouse on Educational Administration, University of Oregon, September, 1970.

The analysis and bibliography combined here focus on: (1) educational management information systems in existence or under development, and (2) evidence on state requirements for such systems.

Managing Human Behavior. Personal Bibliography Number 35. U. S. Civil Service Commission Library. Washington, D. C.: U. S. Government Printing Office, 1970.

This bibliography was compiled by members of the U. S. Civil Service Commission library staff, and includes material from 1965 through December 1969, in the following categories: Research on Individual-Organizational Relationships -- General; Managing Organizational Change and Retaining Morale; Research on Factors Affecting Morale and Job Satisfaction; Improving Morale and Job satisfaction -- General; Attitude Surveys -- Theory and Practice; Research on Factors Affecting Motivation and Productivity -- General; Job Enlargement as a Motivating Device; Fostering Creativity and Innovative Behavior; Using Incentive Awards.

Marien, Michael D. Alternative Futures for Learning: An Annotated Bibliography of Trends, Forecasts, and Proposals. Syracuse, N.Y.: Educational Policy Research Center, Syracuse University Research Corporation, 1971.

This annotated bibliography attempts to cover literature relevant to educational policy-making. A total of 936 books, articles, reports, and magazines are included under the following seven major headings: (1) general, (2) elementary and secondary, (3) higher education, (4) other educating institutions, (5) planning and plans, (6) miscellaneous, and (7) addenda. The document contains an index of bibliographies, and indexes by major author, by organization, and by selected subject. A number of the annotations are critical, but others use only a publisher's annotation. About one fifth of the items are recommended by means of a star, in order to cope with information overload.

Martin, Lynda J. Psychological Investigations in Creativity; A Bibliography. Greensboro, N. C.: Creativity Research Institute, 1965. (ED 026 764)

Listed alphabetically by author are 996 references on experimentation and investigation in the area of creativity since 1954. Included are all articles which have appeared in Psychological Abstracts since 1954, unpublished doctoral dissertations, master theses, papers, and reports.

McCloskey, Michael C. Planning and Regional Planning - What are They? An Annotated Bibliography of Definitions. Monticello, Ill.: Council of Planning Librarians, 1971.

This work is aimed at providing the reader with references with which to discuss the question "What is planning?" It contains 25 items on planning in general, 3 items on regional planning, a list of 15 planning journals, a bibliography of 15 planning bibliographies and a thirty-page section on county and multi-county resource planning.

Models for Planning: Analysis of Literature and Selected Bibliography. Eugene, Oreg.: ERIC Clearinghouse on Educational Administration, University of Oregon, September, 1970.

The analysis and bibliography combined here focus on: (1) the kinds of planning techniques, strategies, etc., that now exist in education or are under development; (2) the evidence of effectiveness of such planning systems; and (3) promising planning models and strategies in other fields not yet applied to education.

Novotney, Jerrold M. (ed.). The Principal and the Challenge of Change. Melbourne, Fla.: Institute for the Development of Educational Activities, Inc., 1968.

The monograph contains five articles: "Creating Disequilibrium" by Kenneth A. Tye, "Conflicting Roles" by Mary M. Bentzen, "Leadership Concerns" by Robert L. Sinclair, "Staff Involvement" by Jerrold M. Novotney, "The Art of Decision Making" by Donald A. Myers, and a bibliography entitled "The Process of Change: A Selected Bibliography."

Olsen, Harold A. The Economics of Information: Bibliography and Commentary on the Literature. Washington, D. C.: ERIC Clearinghouse on Library and Information Sciences, January, 1971.

This report explores the bodies of literature pertinent to the economics of information, a topic of growing interest to the information community and to economists. As used here, economics of information refers to the concepts and tools of economics as they apply to information activities. The report consists of (1) a short section on the economists' framework for analysis, (2) a table that divides the pertinent literature into 14 categories, briefly defines each category, and explains why it is important to information activities, (3) a brief commentary on the state of this literature and (4) a selected bibliography of over 300 items. Most recent literature, especially monographs, technical reports and literature surveys, is covered to the extent that a reader should get a good introduction to this literature. In addition, 25 items are identified as giving particularly informative overviews. These items represent the full range of material from theoretical studies to applied analyses, plus several surveys.

PERT and Other Network Techniques. (n.p.), Systems Command United States Air Force, (n.d.).

This bibliography provides an alphabetical listing of books, articles, presentations, and other papers relating to network techniques in general and PERT in particular.

Piele, Philip K. New Programs for Training School Administrators: Analysis of Literature and Selected Bibliography. Eugene, Oreg.: ERIC Clearinghouse on Educational Administration, University of Oregon, September, 1970.

The analysis and bibliography combined here focus on: (1) effectiveness of existing alternative approaches to training administrators; (2) emerging training programs; and (3) leads for design of new training programs, materials, and approaches.

Planning and Administration: An Annotated Bibliography. Training Methodology, Part II. Washington, D. C.: Health Services and Mental Health Administration, Public Health Service, 1969. (ED 031 627)

This annotated bibliography contains sections on learning theory as applied to instruction, planning, course management, program administration, and general sources.

Procedures for Managing Innovations: Analysis of Literature and Selected Bibliography. Eugene, Oreg.: ERIC Clearinghouse on Educational Administration, University of Oregon, September, 1970.

The analysis and bibliography combined here focus on: (1) current evidence on how local schools identify, judge, install, evaluate, and maintain innovations; (2) facilitators and inhibitors of innovation in schools; and (3) unmet needs in assisting schools to try, adopt, and install innovations.

Self Development Aids for Supervisors and Middle Managers. Personnel Bibliography Series, Number 34, Library, U. S. Civil Service Commission. Washington, D. C.: U. S. Government Printing Office, 1970.

This annotated bibliography brings together material selected on the basis of its general availability in public and federal libraries, in the following areas: Identification and Development of Managerial Skills; Career Planning; Improving Leadership Skills; Human Relations Skills; Managing Health and Tension; Followership; Completed Staff Work; Developing Creative Ability and Innovative Skills; Management of Time; Decision-Making and Problem Solving Skills; Communications Skills -- General; Delegation and Order-Giving; Effective Speaking Telephone Usage; Effective Listening; Writing Improvement; Conference Leadership and Participation; Reading Improvement.

Smith, Stuart C. A Directory of Organizations and Personnel in Educational Administration. Eugene, Oreg.: ERIC Clearinghouse on Educational Administration, University of Oregon, September, 1969.

The directory lists 122 organizations, inlcuding USOE-funded regional laboratories and research centers, school study councils, university research and service bureaus, and a variety of independent organizations. Each organization's policy for supplying information in response to requests and, wherever possible, publications that can be obtained by writing to the organizations are indicated. In addition, 123 persons, respondents to a questionnaire sent to members of the American Educational Research Association, Division A, are listed. For each person in the listing the following information is provided: his title and address for the 1969-70 academic year; the subject(s) of his research; the agency or organization with which his research is affiliated; and, if applicable, publications he has authored that can be obtained by writing directly to him at the address provided.

Terrey, John N. Program Budgeting and Other Newer Management Tools in Higher Education: A Description and Annotated Bibliography. Seattle, Wash.: Washington University, Seattle Center for Development of Community College Education, June, 1968. (ED 024 144)

The first part of this document describes the following four new managerial tools available to the educational administrator: Planning-programming-budgeting systems, systems analysis, PERT or the critical path method, and the Delphi technique which employs the systematic solicitation and collation of expert opinion to achieve consensus in the formulation of goals. The second part is an annotated bibliography which lists 73 books, reports, journal articles, bibliographies, and government publications related to the decision making process, published between 1963 and 1968.

Trocki, Karen F. "The Feasibility of Evaluating the Community Impact of VISTA Activities: A Bibliography." Final Report, Part II. Pittsburgh, Pa.: American Institutes for Research, April, 1969.

The following bibliography of both annotated and non-annotated citations has been compiled to accompany the report--Feasibility of Evaluating the Community Impact of VISTA Activities prepared for the Division of Plans and Research, VISTA, of the Office of Economic Opportunity. References were chosen to encompass the entire range of activities in the poverty program and the objectives, methods of operation, and evaluation of these activities. Sections were also prepared on social science methodology (particularly in regard to evaluation techniques) and community development activities which have taken place outside of the poverty program.

Tucker, Dorothy. Computers and Information Systems in Planning and Related Government Functions. Monticello, Ill.: Council of Planning Librarians, 1968.

This book lists about 300 items under the headings Feasibility, Statewide EDP Systems, EDP in Local Governments, Intergovernmental EDP Systems, EDP in the Planning Agency, Data Banks, Information Systems, Computer Graphics, Information Retrieval, Time-Sharing, Models, Gaming Simulation and Operations Research. It lists periodicals devoted to EDP and gives agency addresses. It omits Federal government publications and items dealing with specific applications and is aimed at readers who wish to consider EDP for planning in general.

Tudor, Dean. Planning-Programming-Budgeting Systems. Monticello, Ill.: Council of Planning Librarians, 1970.

This bibliography lists over 200 articles, reports and books on PPBS for the novice in this field.

Tyler, Louise L. A Selected Guide to Curriculum Literature: An Annotated Bibliography. Washington, D.C.: Center for the Study of Instruction, National Education Association, 1970.

This bibliography is aimed at serving as an intellectual instrument to enable the reader to understand the character and direction of curriculum as it currently exists, to engage in dialogue, and then to redirect some of the formulation of ideas about curriculum.

Wasserman, Paul, and Fred S. Silander. Decision-Making: An Annotated Bibliography Supplement, 1958 - 1963. Ithaca, N. Y.: Cornell University, 1964.

This Supplement brings up to 1964 the review of the literature of decision-making contained in a publication of 1958. The annotations are descriptive, rather than critical, and are categorized under the headings: general and theoretical material, leadership, behavioral decision theory, small groups, community decision making, communications and information handling, techniques and methods, and cases and applications. An author index and a title index are provided. There are about 500 items.

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